To: Hengst, Benjamin[Hengst.Benjamin@epa.gov]
From: 25x'25
Sent: Fri 9/20/2013 4:24:00 PM
Subject: Weekly REsource For Sept. 20, 2013

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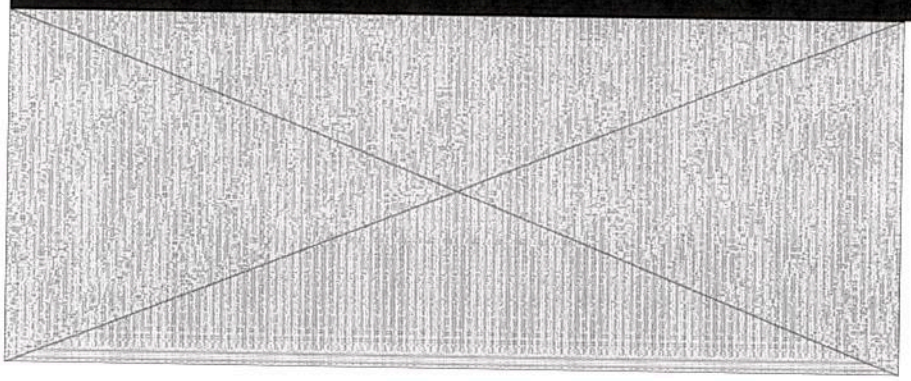


The 25x'25 REsource, *our blog site, remains down due to technical issues. We continue working to restore the site. Until then, we will make our blogs available through our E-publications mailing list. Thank you for your interest in 25x'25 and your patience until we get the blog site back up and running.*

25x'25 is an objective and trusted source of information on agricultural and forestry renewable energy and climate solutions. You can also visit us at our Facebook page and follow us on Twitter.

[redacted]

Our Featured Blog

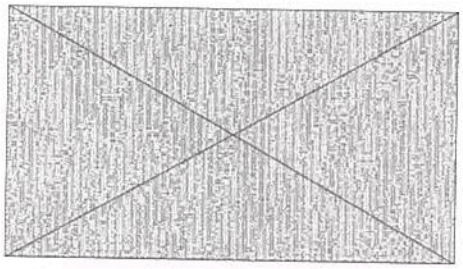
Come on U.S. Congress: Get your Act Together

News of Note

It is with incredible distress that we are forced to watch this week as the Senate, and Congress as a whole, potentially botches an opportunity to pass a strongly bipartisan energy efficiency bill. Once again, the ugly head of bitter partisanship rises and an effort to bring a meaningful measure supported by both parties could fall victim to political posturing. The sheer repetitiveness of these implosions of Senate protocol would be thought of as absurd if, in fact, they were not so sad. The legislation in the crosshairs this time around is a renewable energy and energy efficiency measure that will save the nation billions of dollars while creating tens of thousands of domestic jobs, all while reducing energy waste. Read more...

Western States Are Leading the Way toward Sustainable Energy

Renewable energy resource availability, supportive policies and well-developed supply chains have transformed states in the Western United States into national leaders in renewable energy development, according to a report released this week by the American Council On Renewable Energy (ACORE).



Lesley Hunter, research and program manager at ACORE, says that in 2012, the 13 western states attracted more than half of the country's combined venture capital, private equity and asset finance investment in the renewable energy sector. Citing sources that include Bloomberg New Energy Finance and the DOE's Energy Information Administration, she says the states also produced approximately 31 percent of their total energy generation from renewable energy sources - compared to roughly 12 percent nationally.

Well-designed state policies have been instrumental in attracting renewable energy companies from around the world to deploy renewable energy in the region for power, heating and transportation, the report states. Nine of the 13 western states have binding mandates for renewable energy production, many with minimums for certain distributed generation technologies and/or solar energy.

An array of state financial incentives pair with the rules and regulations to mitigate the cost of renewable energy systems, ACORE finds. Many states continue to express political support for increased renewable energy development, like in Nevada, where the state government recently passed legislation that would close its remaining coal-fired plants and increase renewable energy production in the state. A number of states also defeated legislation over the past several months that would have weakened or

repealed their renewable portfolio standards.

Headlines of Note

News of interest to our 25x'25 Partners and advocates for a clean energy future:

The report asserts that nearly all available renewable energy technologies are well suited for deployment in the West, including solar, wind, hydro, biomass, geothermal, marine and waste energy, as well as biofuels.

America's Power Plan Offers Policy Recommendations for the Nation's Energy Future

Biofuel Crop in Need of Insurance Protection, Says University Professor

The region benefits from some of the best solar resources in the country, responsible for roughly 65 percent of the nation's solar photovoltaic capacity and 86 percent of the nation's solar thermal electric capacity, the report says, adding that the country's utility-scale geothermal power projects currently operate in this region exclusively and hydropower accounts for about 25 percent of the region's electricity generation.

Energy Secretary Moniz Dedicates Clean Energy Research Center, New Supercomputer

Farmer's Markets: The Real Story of Food and Fuel

France Wants Higher Biofuel Use than EU Lawmakers

California and Oregon rank within the top five states for wind power capacity, while wind power projects have been built in every western state.

Google Inks another Long-Term Wind Contract

Is Brazilian Sugarcane the Answer to U.S. Biofuels Needs?

Net Metering: How a Little-Known Policy Can Shave Hundreds Off Your Electricity Bills

Companies have begun producing advanced biofuels at a number of facilities and produce ethanol and biodiesel commercially to fuel the region's many alternative-fueled vehicles. Meanwhile, a number of biomass facilities produce energy from municipal solid waste, wood waste, agricultural residues, and other organic feedstocks.

Ninth Circuit Upholds California's Low Carbon Fuel Standard

Top 10 Scariest Challenges for the Biofuels Industry

U.S. Revives Aid Program for Clean Energy

The report shows that developers have chosen western states to be the site of groundbreaking, innovative renewable energy projects, like ocean thermal energy conversion (OTEC) and wave energy experiments in Hawaii and Oregon. Waste heat can be converted into electricity at a number of industrial facilities, like steel mills, paper plants, refineries, chemical plants, oil and gas pipelines, as well as renewable and non-renewable power plants.

Why Not Wind Energy?

Wind and Solar Energy Use Soars in the U.S. As Costs Drop

Upcoming Events

Residences, businesses, and government buildings use renewable resources for heating and cooling purposes throughout the region, from solar thermal, biomass thermal, and geothermal direct use systems.

SAFER Sets Webinar Oct. 4 on Communicating Benefits of Bioenergy

Hunter say investors feed billions of dollars to renewable energy projects, technologies and companies in the western United States each year, spurring the creation of

All too often, bioenergy supporters are playing defense - responding to attacks or criticism of policies that support bioenergy initiatives. On Oct. 4 from 11 a.m. to 12 noon

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thousands of jobs and stimulating local economies.

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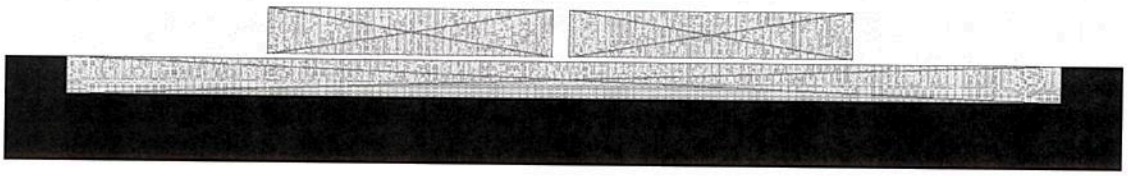
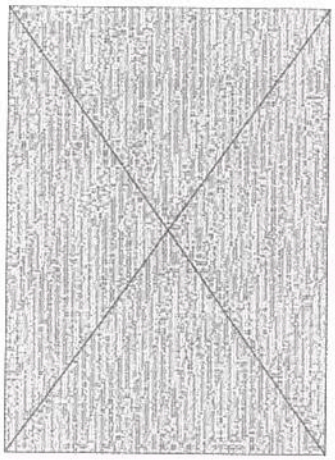


support," says Hunter.

Lawmaker Says EPA May Render Legislative Changes to RFS Unnecessary

One of four House Republicans charged with looking at possible changes to the federal Renewable Fuel Standard (RFS) said this week that if EPA sets "realistic" biofuel targets under the RFS in 2014, legislative changes to the standard are unlikely.



Rep. John Shimkus (R-IL), one of four GOP members of the House Energy Committee charged by Chairman Fred Upton (R-MI) to look at possible changes in the RFS, told a Platts energy conference that if modifications were needed, legislation that would amend the statute that created the current standard would be drafted around the end of the year.

But he told reporters at the forum that if EPA is "more realistic with the numbers, they could be really helpful" and the need for legislation would become moot.

The oil industry this week has brought leaders into Washington this week to ratchet up their call on Congress to repeal the RFS, which incrementally increases the amount of biofuels that must be blended into U.S. gasoline and diesel supplies each year through 2022. The American Petroleum Institute (API) and other industry trade groups cite an approaching "blend wall" that results from reduced gasoline demand insufficient to meet the RFS volume requirements for biofuels to be blended into the U.S. transportation fuel supply.

API's Bob Greco told reporters in a conference call Tuesday that while EPA has acknowledged that some changes must be made in 2014's specific volume requirements, any reductions offered by the agency is a "Band-Aid" and "doesn't fix the underlining problems with the RFS." The oil industry claims the RFS drives up prices at the pump and wants it repealed.

The biofuel industry, however, says the oil industry is simply trying to protect its market share at a time of high profits and say any blend wall pressure can be alleviated by increasing the availability of ethanol by selling more E15 (15 percent ethanol blend) and E85. Most ethanol sold in the country is through an E10 blend.

Noting that Tuesday marked the 1,000th day that gasoline has topped $3 per gallon, biofuel advocates say the nearly 10-percent share of the national fuel supply made up by biofuels is reducing the need for imported oil. They cite studies showing the blending of ethanol has kept gas prices considerably lower than if no ethanol were blended.

Biofuel industry leaders also say the Energy Independence and Security Act of 2007, which updated the RFS and its biofuel mandates, gives EPA the flexibility it needs to make changes to the RFS to better reflect market conditions, and that no legislative fixes are needed.

Bob Dinneen, president and CEO of the Renewable Fuels Association, said gas prices could continue to increase unless ethanol is used as "a viable and sustainable tool" to "stop gas prices from rising at the pump."

EPA has indicated it plans to lower some volume requirements in 2014, particularly to reflect advanced biofuel production numbers that are much lower than envisioned when the RFS was updated six years ago. The agency has sent its RFS volume requirements for 2014 to the White House Office of Management and Budget for review and has said it will press to meet a Nov. 30 deadline to issue the requirements.

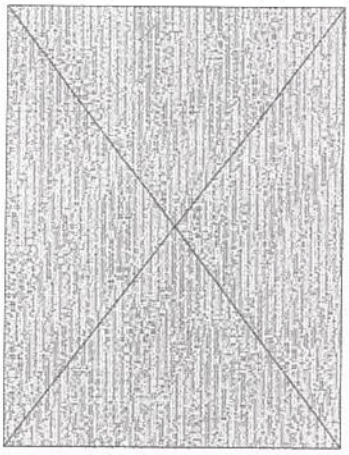
Adding further complexity to the debate over the RFS is a report in the *New York Times*

last weekend alleging that Wall Street financial institutions stockpiled large quantities and manipulated upward the price of Renewable Identification Numbers (RINs), credits used by oil companies to help meet RFS volume requirements. RINs rose from 7 cents each in January to more than $1.40 in July, before falling to some 60 cents per gallon this week.

Oil industry leaders have said the soaring cost of RINs reflects the inadequacy of EPA's implementation of the RFS. However, the disclosures made by the *Times* would indicate speculation may play a large part in the RIN price hikes.

Biodiesel Production on Record Pace

Year-to-date U.S. biodiesel production is on a record pace at more than 915 million gallons, EPA reports. The agency said 148 million gallons of biodiesel were produced in August, keeping the sector at its highest production level ever.



With more than 1 billion gallons of production in each of the past two years, biodiesel is the first EPA-designated Advanced Biofuel to reach commercial-scale production nationwide. Advanced Biofuels are those designated under the federal Renewable Fuel Standard of having at least 50 percent fewer greenhouse gas (GHG) emissions than their petroleum equivalent. The industry has surpassed RFS targets for the category since the program began and is on track to exceed the 1.28 billion gallon biodiesel target set under the RFS for this year.

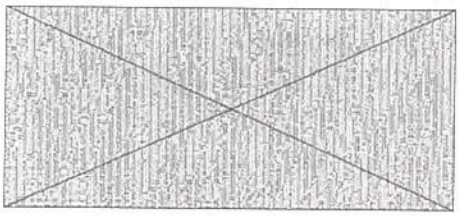
The production volumes are reported under the biomass-based diesel category of the RFS. The monthly numbers show a total of more than 177 million gallons of biomass-based diesel in August, a total that includes nearly 30 million gallons of renewable diesel, a similar diesel replacement made with the same resources but using a different technology.

For the year, biodiesel and renewable diesel together have already exceeded 1 billion gallons, with nearly 1.1 billion gallons total.

Made from an increasingly diverse mix of resources such as recycled cooking oil, soybean oil and animal fats, biodiesel is produced in nearly every state in the country and supports some 50,000 jobs. The National Biodiesel Board is the U.S. biodiesel trade association.

'Toolkit' Aims to Ease Transformation to Low-Carbon Electricity Grid

An energy policy consulting firm and the Energy Foundation this week unveiled a "toolkit designed to help energy decision-makers determine the policies needed to allow for a successful transformation of America's electricity system."



The America's Power Plan (APP) from Energy Innovation and the foundation builds on previous studies, including the NREL's Renewable Electricity Futures study, which demonstrates the technical feasibility of a low-carbon electric grid.

Officials say APP is the nation's first comprehensive effort to analyze the impending challenges to the electric power system and offer policy and market solutions.

Developers note that over the past year, more than 150 energy experts have been involved in producing papers and other materials for the plan, which is composed of

eight reports, including an overview paper along with seven other papers that each discuss a unique topic within the power sector.

Written by Energy Innovation CEO Hal Harvey, and Director of Strategy Sonia Aggarwal, the overview paper summarizes trends in the electricity system, lists overarching goals and ways of accomplishing them, and offers best practices for competitive markets and performance-based regulation.

Topics for the seven other reports include power markets, utility business models, finance, distributed energy resources, distributed generation, transmission, and siting.

The Plan also features an interactive website with all the papers as well as videos, blog posts, and opinion pieces from the authors.

The electric power sector is a crucial element of the American economy, officials say. Harvey said that in order to maintain and improve access to reliable, cost-effective, and clean electricity, the grid must evolve.

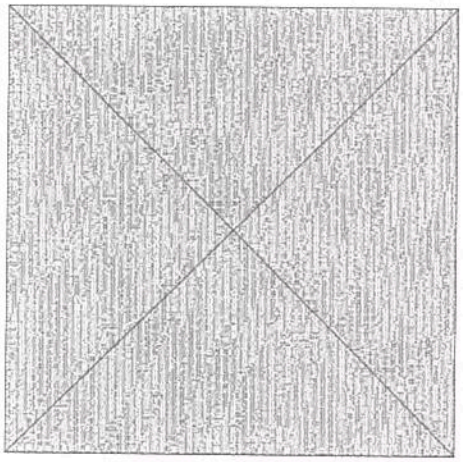
"Regulators, policy makers, and utilities will need to rewrite their playbooks if we are going to build a more reliable, more sustainable, more affordable power system that takes full advantage of clean technologies," he said.

As the power system moves into a new era of variable supply, controllable demand, and cheap renewable energy sources, America must develop an innovative energy paradigm, Harvey said. While there is no 'one-size-fits-all' solution to creating a clean, reliable electric grid, APP's treatment of the key issues and its variety of recommended strategies enables local and state decision-makers to implement solutions that are tailored to their specific realities, officials say.

America's Power Plan was unveiled this week at the National Association of State Energy Officials' annual meeting in Denver, and will be published in Elsevier's October issue of *Electricity Journal*.

Dairy Digester Proposals Sought for Funding

The California Department of Food and Agriculture (CDFA), EPA and their partner agencies in the California/Federal Dairy Digester Working Group have issued a joint solicitation for dairy digester concept proposals.



California is the largest dairy state in the USA, with approximately 1.7 million cows producing more than 3.6 million dry tons of manure per year that must be managed to reduce or mitigate environmental impacts. Manure can be processed by anaerobic digesters to produce biogas, a flexible renewable source of energy.

The ultimate goals of the collaboration are to see the widespread adoption of digester systems to better manage manure and nutrients, help address air and water quality concerns, reduce greenhouse gas emissions, and produce renewable energy, fertilizer, and other value-added products.

"California farmers and ranchers are innovators by nature," said CDFA Secretary Karen Ross. "Dairy digester technology is an idea whose time has come, and that is largely due to work done right here on California's dairy farms. We are at a point where focused funding can help us make the transition to wider adoption and implementation of digesters in our state."

"Dairy digesters can benefit the environment by reducing greenhouse gasses and generating renewable energy", said Jared Blumenfeld, EPA's Regional Administrator for the Pacific Southwest. "EPA is optimistic that this call for proposals will result in unique and innovative technologies that will benefit California, the nation's number-one dairy state."

In 2011, EPA, USDA and CDFA convened the digester working group, a partnership of state, federal and local agencies, academia, industry, non-profits and utilities brought together to identify and remove barriers to the development and permitting of dairy digester systems in California. The work has culminated in specific recommendations to reduce the economic, technical and regulatory hurdles currently in place, making digester systems more feasible in the nation's number-one dairy producing state.

The solicitation is another key part of the working group's mission, officials say.

Proposals should include development, installation and operation of dairy manure digester and co-digester projects and may include processes for the treatment and disposal of waste streams from the digester operations to address environmental impacts. Dairy digester and co-digester development is expected to take place on individual dairies or at centralized facilities located within California.

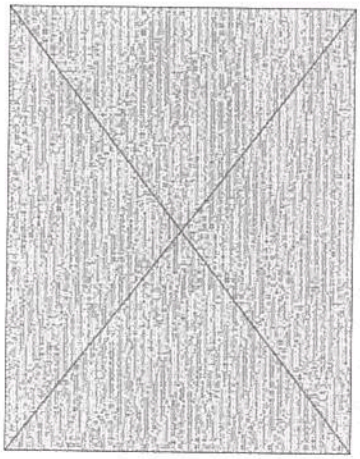
Funding may be provided by various participating agencies of the working group for proposals that are deemed most viable with the greatest measurable outcomes. Individual digester projects will have to qualify for funding on a case-by-case basis and projects can potentially receive financial support from multiple participants.

To assist in identifying potential funding sources, the California/Federal Dairy Digester Working Group has put together a Funding Matrix document. The matrix identifies potential funding sources along with general criteria for the types of projects that would qualify for the funding. A copy of the solicitation and funding matrix can be found by clicking HERE.

For more information on diary digesters, click HERE and HERE.

Group Pushes Plan to Cut Oil Use, Boost Alternative Sources of Power

With sound science, advanced technology, and smart policy, the United States can cut projected oil use in half in 20 years, says the Union for Concerned Scientists (UCS).



The group says its "Half the Oil" plan aims to "ensure a cleaner and safer energy future, in which passenger vehicles are powered by fuel-sipping (as opposed to fuel-guzzling) engines that take us nearly twice as far on a gallon of gasoline, and in which biofuels, electricity, and even hydrogen generated from clean and renewable resources - such as the sun, the wind, and waste products - power cars and trucks."

The group also says the new energy future is one "in which we live in healthier communities, prosper from a strong economy, and help safeguard our planet against the disastrous effects of climate change."

In 20 years, the plan, says UCS, can result in a cut in U.S. annual oil spending by $550 billion each year, the creation of more than 1 million jobs, and the elimination of some 2 billion metric tons of greenhouse gas emissions per year.

UCS is promoting the "Oil Solutions at Work" project to highlight people who work in the field of oil savings solutions. The group is reaching out to members and other stakeholders and asking them to tell their stories of their work or activities that illustrate how they are helping to reduce oil use and stimulate the economy.

The plan calls for improve vehicle fuel efficiency, greater consumer choice on how vehicles are powered, and implementing "smart growth" in community design to better integrate transportation options and reduce commute times. The plan foresees the deployment of oil-saving technologies in communities near ports and other distribution hubs that create heavy traffic, reducing harmful diesel emissions and their associated health impacts, including respiratory illness, asthma, and heart attacks.

UCS says jobs will be created as consumer spending is shifted from oil to other sectors of the economy that demonstrate a higher potential for employment opportunities compared to the oil and gas industry, resulting in growth in real wages and state revenues.

The group also sees the plan increasing the use of alternative energy sources not associated with the global energy market, offering an "insurance policy" against oil price shocks and the dramatic rise in prices and economic impacts that come with them.

EDT, a webinar,*Branding the South as a Bioenergy Leader*, will be held by the Southeast Agriculture and Forestry Energy Resources Alliance (SAFER) to explore how we can turn this around with a focus on pro-active communication about the positive aspects of bioenergy. Drawing on her experience in managing regional marketing and branding activities, Lee Anne Nance, Executive Vice President of the Research Triangle Partnership and Managing Director of the Research Triangle Cleantech Cluster, will share tips on branding the South as a bioenergy leader and getting out the word about positive success stories in your community, region and state. There is no charge, but those interested in participating are asked to register in advance at https://southern.ilinc.com/register/bkpmrxw

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Other events of interest to 25x'25 partners and other renewable energy stakeholders can be found by clicking **here**.

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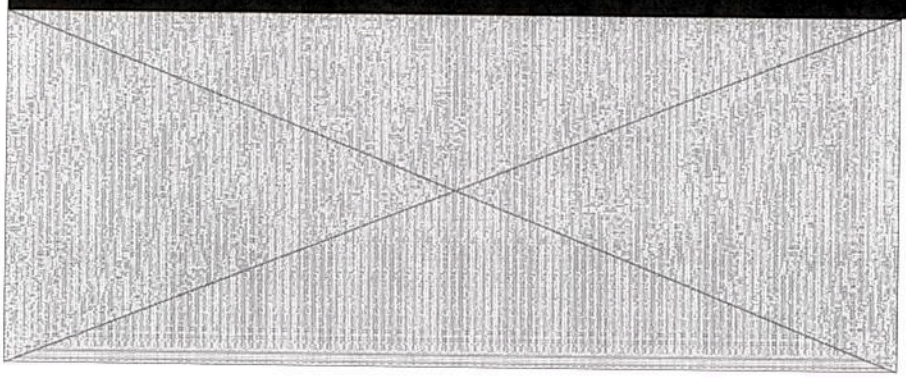

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Our Featured Blog

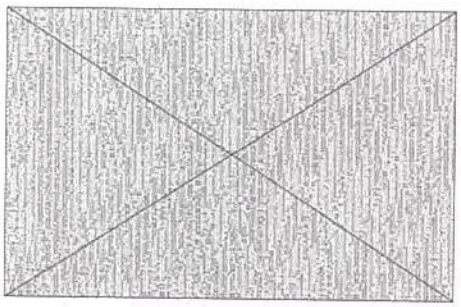
Biomass Contributions to America's Energy Future

News of Note

Another positive development for bioenergy solution sets occurred this week when Agriculture Secretary Tom Vilsack announced a partnership agreement to expand wood energy use, a pact that formalizes USDA's support for bioenergy applications and technologies. The agreement is a reaffirmation of the role biomass plays in our nation's energy supply - a role that should not only be sustained, but enhanced. The agreement with 25x'25 partners that include the Biomass Power Association, Biomass Thermal Energy Council and Pellet Fuels Institute, along with the Alliance for Green Heat, will help find innovative ways to use wood to create renewable energy and support good jobs in rural America. Read more...

25x'25: Climate Change Presents Challenges, Opportunities for U.S. Ag

The 25x'25 Alliance joined other farm and energy groups testifying before a congressional, bicameral Task Force on Climate Change, telling lawmakers that "climate change is real, and it will pose major challenges, as well as opportunities, for U.S. farmers, ranchers, and foresters."



Ernie Shea, 25x'25 project coordinator, told the panel that while "the causes of climate change are widely debated, its impacts will need to be addressed in order for agriculture to continue meeting the world's growing needs for food, feed, fiber, and fuel."

He cited the recent work of the 25x'25 Adaptation Work Group, which has brought together agriculture, forestry, business, academic and conservation leaders to explore the impacts of a changing climate on the agriculture and forestry sectors and develop a prioritized series of recommendations for actions that should be taken by government agencies, universities, and business partners, as well as farmers, ranchers, and forest land managers.

In addressing the adaptation challenges in the coming decades, Shea said the Work Group met with climate scientists, agronomists, economists, sociologists and other experts, and studied peer reviewed scientific studies and reports.

Publishers of Note

News of interest to our 25x'25 Partners and advocates for a clean energy future:

Synthesizing the information gathered, the Work Group published a report in January 2012, "Agriculture and Forestry in a Changing Climate: The Road Ahead," which revealed that average U.S. temperatures are expected to rise anywhere from 4 to 11 degrees Fahrenheit by 2100, heavy precipitation events are expected to rise, droughts will become more frequent and intense, and carbon dioxide emissions will increase.

Five Barriers and Solutions for Community Renewable Energy

Shea said a second report issued by the Work Group last April, "Agriculture and Forestry in a Changing Climate: Adaptation Recommendations," identified options available to address the uncertainty of a changing climate and mitigate risks, while strengthening productivity, cutting input costs, and improving the quality of the land.

'Stacking' Method Boost For Solar Power

Targeting Ethanol Mandates Seen Hurting Cellulosic Fuels

The report, he said, was issued "to trigger a national dialogue on steps needed to prepare for an uncertain future." Shea called for boosts in support for research; the development of stronger production systems and practices made available to growers, broadened risk management tools that address climate change; and building on planning and decision tools that enable growers to deal with changing conditions as they approach.

U.S. Military Is Going Green

U.S. Solar Power Rises 151 Percent on Large Scale Power Projects

Shea also told the panel of a widespread communications and outreach initiative involving educating agricultural and forestry leaders on the potential impacts of climate change in ways relevant to their daily lives. The campaign aims to equip producers with the tools and knowledge they need to make informed decisions and manage new risks under changing conditions, while mobilizing opinion leaders to advocate for needed changes in land use practices, research, education, and policy. The initiative also aims to inspire agricultural and forest sector leaders to become leaders in the broader discussion of climate change, including adaptation and mitigation.

Upcoming Events

SAFER Sets Webinar Oct. 4 on Communicating Benefits of Bioenergy

All too often, bioenergy supporters are playing defense - responding to attacks or criticism of policies that support bioenergy initiatives. On Oct. 4 from 11 a.m. to 12 noon EDT, a webinar,*Branding the South as a Bioenergy Leader*, will be held by the Southeast Agriculture and Forestry Energy Resources Alliance (SAFER) to explore how we can turn this around with a focus on pro-active communication about the positive aspects of bioenergy. Drawing on her experience in managing regional marketing and branding activities, Lee Anne Nance, Executive Vice President of the Research Triangle Partnership and Managing Director of the Research Triangle Cleantech Cluster, will share tips on branding the South as a bioenergy leader and getting out the word about positive success stories in your community, region and state. There is no charge, but those interested in participating are asked to register in advance at https://southern.ilinc.com/register/bkpmrxw

Renewable Energy Shortchanged in Annual Report, Groups Tell EIA

Nearly 100 renewable energy stakeholder groups, including 25x'25, have written the head of DOE's Energy Information Administration (EIA) asking that the agency's methods for compiling the annual energy outlook, a document widely used by policy makers in the public and private sectors, be revamped to better reflect renewable energy growth.

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Events of interest to 25x'25 partners and other renewable energy stakeholders can be found by clicking here.

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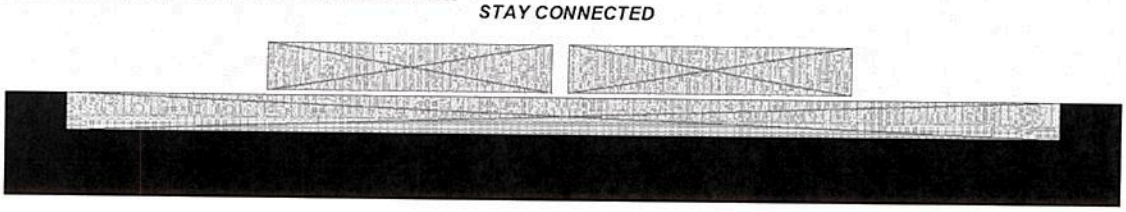


In support of their contention that EIA is getting the numbers wrong, the groups cite EIA's 2013 outlook projecting renewable energy's share of U.S. electricity generation would climb from 13 percent in 2011 to 16 percent in 2040. However, the letter notes that EIA said in August said that renewables made up 14.2% of net generation in the first half of 2013.

"It seems highly implausible that it will now take another 27 years to grow from 14.2 percent to 16 percent," the letter states.

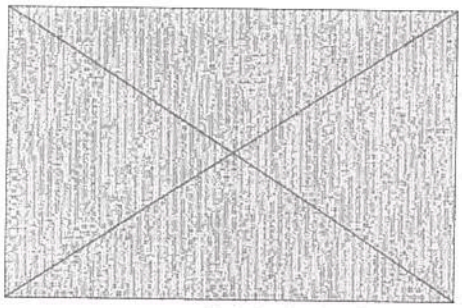
The groups acknowledge that EIA projections for renewables in 2040 are larger if it's assumed the nation will adopt broad-based carbon-fee policies to reduce greenhouse gas (GHG) emissions, but suggest the 31 percent forecast by EIA under those conditions is also "unduly modest."

"If aggressive federal GHG policies should be adopted, coupled with already-existing and expanding state-level initiatives, the contribution from all renewable sources, including geothermal, hydropower, and biomass, would almost certainly expand far more rapidly than has been the case in recent years and likely exceed EIA's higher estimate of 31 percent," the letter says.

Other groups signing the letter include the Environmental and Energy Study Institute, Environmental Defense Fund, Environmental Law & Policy Center, Natural Resources Defense Council, Geothermal Association and World Wildlife Fund.

California Legislators Adopt Aggressive New Energy Measures

California state legislators this week passed a package of measures this week that make the state's ambitious renewable energy goals even more aggressive. The legislation given final passage by the State Senate now heads to the desk of Gov. Jerry Brown.



California currently requires most utilities to generate at least 33 percent of their power from renewable resources by 2020. If signed into law as expected, the legislation adopted this week would enable the California Public Utilities Commission to raise the percentage on its own, without legislative authorization.

The measure also boosts the state's net metering policy, repealing a law that would have let the state's net metering system expire next year and giving solar companies a greater advantage in selling panels to residential and commercial customers who can sell their excess power back to the grid. The new law calls on the utilities commission to design a new net metering program, effective in 2017.

"This is a banner day in California," said Rhone Resch, president and CEO of the Solar Energy Industries Association. "Once again, state lawmakers have set the bar high when it comes to the adoption of renewable energy."

He said the legislation provides "a clear pathway" for continued growth of solar generation in California, which ranks first in the nation in total installed solar capacity with 3,761 megawatts (MW) - three times more than any other state. Resch said the industry also supports nearly 44,000 jobs across the state.

Resch said his group plans to work closely with the utilities commission "to ensure that future rules preserve consumer choice, ensuring that California homeowners, businesses and schools will continue to benefit from clean, reliable solar energy."

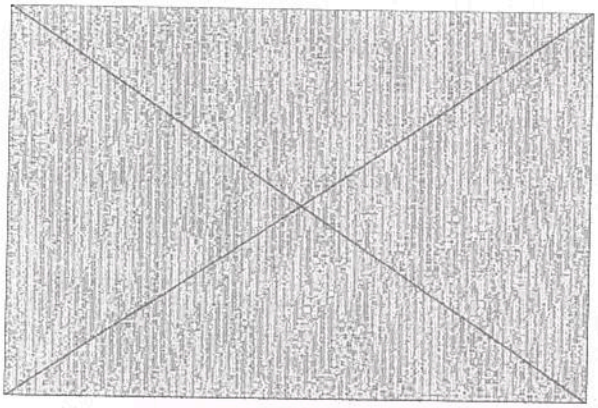
The legislation also authorizes the commission to amend utility billing rates to lower monthly bills for consumers in hotter parts of California. The measure authorizes large

investor-owned utilities, such as Pacific Gas & Electric and Southern California Edison, to negotiate among themselves to implement billing changes.

The bill passed in both houses of the legislature by wide margins.

Report: U.S. Installs 832 MW of Solar PV in Q2 2013

An industry report released this week shows continued growth in the solar market, with 832 megawatts (MW) installed in the United States during the second quarter of 2013. The total represents 15 percent growth over the first quarter of this year and represents the industry's second best quarter ever.



The report, "U.S. Solar Market Insight: 2nd Quarter 2013," was released by the Solar Energy Industries Association (SEIA) and GTM Research and is touted by the industry trade group as the definitive analysis of solar power markets in the U.S., with strategic state-specific data for 28 states and the District of Columbia.

The report shows the largest share of photovoltaic (PV) installations came from the utility sector, with 38 completed projects totaling 452 MW, a jump of 42 percent over last quarter.

The residential market experienced a slight hiccup in the second quarter, breaking its streak of incremental quarterly growth with a flat quarter, and in the non-residential

(commercial) market, only 13 out of the 28 states tracked in the report showed quarterly growth.

However, the report forecasts a resumption of growth in the second half of 2013, with 4.4 GW of PV expected to come online this year, up from 3.3 GW in 2012, an overall annual growth rate of 30 percent.

The solar market experienced significant variability across states in the quarter that analysts say was expected. However, despite the end of incentives in some states - an indicator of solar's increasing competitiveness - 20 of the 28 states tracked in the report are on pace to increase their annual installation of solar energy over 2012.

"Distributed generation is the big story in the U.S. solar market this year," said Shayle Kann, vice president of research at GTM. "We expect significant growth, especially in the residential sector, but the future will be dictated by the increasingly-complex nexus between the solar industry and utilities."

Looking at the U.S. solar market on the whole, the report forecasts more than five gigawatts (GW) of PV and concentrating solar power (CSP) will be installed by the end of 2013. At that time, cumulative solar PV capacity will surpass 10 GW.

"America's solar energy industry remains on course to have another record-shattering year," said SEIA President and CEO Rhone Resch. "Today, there's more than 9,370 megawatts (MW) of total solar electric capacity across the U.S. - enough to power more than 1.5 million American homes, including the White House. We're helping to create new jobs, grow the U.S. economy, strengthen our nation's long-term energy security and fight climate change. That's a win-win in anyone's book."

Key findings from the report include:

· PV installations totaled 832 MW in Q2 2013, up 15 percent over Q1 2013.

· Cumulative operating PV capacity in the U.S. now stands at 8,858 MW.

· 4,372 MW of PV are forecast to be installed in 2013, up from 3,366 MW in 2012, a 30

percent growth rate.

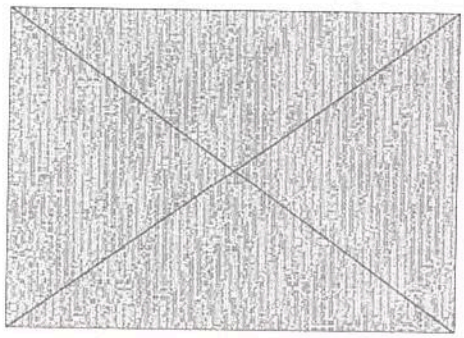
· The utility market completed 38 projects totaling 452 MW; there are currently 4.1 GW of utility-scale projects in construction.

· The residential market was flat quarter-over-quarter, breaking its streak of incremental quarterly growth.

· The non-residential market was down in Q2, continuing a relatively light year for the segment.

Researchers Find Way to Boost Output of Stacked Solar Cells

North Carolina State University researchers have come up with a new technique for improving the connections between stacked solar cells, which should improve the overall efficiency of solar energy devices and reduce the cost of solar energy production.



The new connections can allow these cells to operate at solar concentrations of 70,000 suns worth of energy without losing much voltage as "wasted energy" or heat, researchers say.

The discovery means solar cell manufacturers can create stacked solar cells that can handle high-intensity solar energies without losing voltage at the connecting junctions, potentially improving conversion efficiency.

Stacked solar cells consist of several that are stacked on top of one another and are currently the most efficient cells on the market, converting up to 45 percent of the solar

energy they absorb into electricity.

But to be effective, solar cell designers need to ensure the connecting junctions between the stacked cells do not absorb any of the solar energy and do not siphon off the voltage the cells produce - effectively wasting that energy as heat.

"We have discovered that by inserting a very thin film of gallium arsenide into the connecting junction of stacked cells we can virtually eliminate voltage loss without blocking any of the solar energy," says Dr. Salah Bedair, a professor of electrical engineering at NC State and senior author of a paper describing the work.

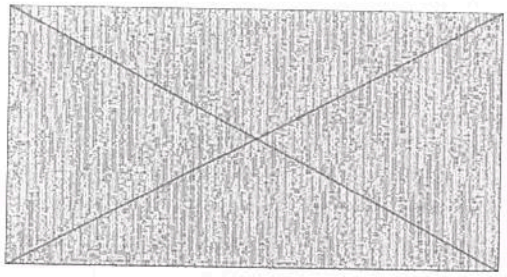
Researchers say the work is important because photovoltaic energy companies are interested in using lenses to concentrate solar energy, from one sun (no lens) to 4,000 suns or more. But if the solar energy is significantly intensified - to 700 suns or more - the connecting junctions used in existing stacked cells begin losing voltage. And the more intense the solar energy, the more voltage those junctions lose, thereby reducing the conversion efficiency.

"Now we have created a connecting junction that loses almost no voltage, even when the stacked solar cell is exposed to 70,000 suns of solar energy," Bedair says. "And that is more than sufficient for practical purposes, since concentrating lenses are unlikely to create more than 4,000 or 5,000 suns worth of energy. This discovery means that solar cell manufacturers can now create stacked cells that can handle these high-intensity solar energies without losing voltage at the connecting junctions, thus potentially improving conversion efficiency."

He said the development should reduce overall costs for the energy industry because, rather than creating large, expensive solar cells, much smaller cells that produce just as much electricity by absorbing intensified solar energy from concentrating lenses can be used. He added that concentrating lenses are relatively inexpensive.

USDA Announces Support for Advanced Biofuels, 'Smart' Grid

USDA this week announced the payment of nearly $15.5 million to 188 producers through the Advanced Biofuel Payment Program.



"Producing advanced biofuels is a major component of the drive to take control of America's energy future by developing domestic, renewable energy sources," said Rural Development Acting Under Secretary Doug O'Brien at the National Advanced Biofuels Conference.

The funding is being provided through a program established in the 2008 Farm Bill that bases payments to eligible producers on the amount of advanced biofuels produced from renewable biomass, other than corn kernel starch. Examples of eligible feedstocks include crop residue; animal, food and yard waste; vegetable oil; and animal fat.

O'Brien said the announcement serves as a reminder of the importance of USDA programs for rural America and of the need for Congress to get a comprehensive farm bill done as soon as possible.

"Job seekers in rural America need new and expanded investments in renewable energy, biofuel and bio-based product manufacturing - all of which can help create jobs in rural areas," he said.

An example cited by USDA is Riverview LLP, a Minnesota-based company that will be receiving an $8,040 payment to help offset the cost of producing electricity from two anaerobic digesters. The two digesters use manure from two of the company's dairy operations to produce electricity, which is sold to Great River Energy. During the last quarter of 2012, the anaerobic digesters produced almost 4.9 million kilowatt hours of electricity, enough to power more than 400 homes a year.

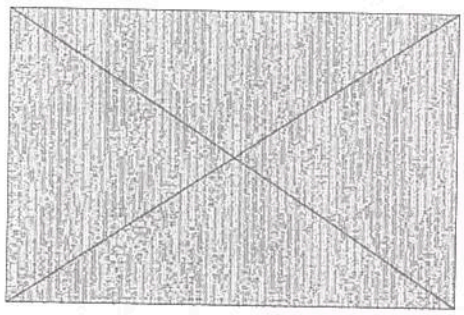
Elsewhere, Community Fuels, in Encinitas, CA, is receiving a $47,186 payment for its quarterly production of biodiesel from a variety of sources, including canola and soybean oil. The department also noted that Community Fuels has previously used funds from the program to install equipment and increase production at its bio-refinery at the Port of Stockton, CA.

Also this week, USDA announced loan guarantees for projects in eight states to improve electric service for about 10,000 rural residents, including more than $11 million in smart grid project funding. Rural Utilities Service Administrator John Padalino said the "investments will continue to ensure safe, reliable and affordable service for rural residents, farmers, and commercial and industrial consumers."

He said smart grid investments, made through loan guarantees authorized by USDA's rural utilities program, "modernize our nation's electric system and improve its operation."

Research Shows Biofuel Can Be Derived from Coffee Grounds

University of Cincinnati researchers are discovering that an ingredient in old coffee grounds might someday serve as a cheaper, cleaner fuel for cars, furnaces and other energy users.



Researchers used a three-pronged approach to converting waste coffee grounds into energy sources including biodiesel and activated carbon:

· Extracting oil from the waste.

· Drying the waste coffee grounds after oil removal to filter impurities in biodiesel production.

· Burning what was left as an alternative energy source for electricity, similar to using biomass.

Launched the project in 2010, the researchers gathered waste coffee grounds in a five-gallon bucket from a Starbucks store on UC's campus. After collection, they removed the oil from the waste coffee grounds and converted triglycerides (oil) into biodiesel and the byproduct, glycerin. The rounds were then dried and used to purify the biodiesel they derived from the grounds.

Preliminary results showed that the oil content in the grounds was between 8.37-19.63 percent, and biodiesel made from coffee oil meets the ASTM International D6751 standard.

The efficiency of using coffee grounds as a purification material to remove the impurities in crude biodiesel, such as methanol and residual glycerin, was slightly lower compared with commercial purification products. However, the researchers report that results still indicate a promising alternative, considering the cost of purification products.

Still, the researchers note, waste coffee grounds that result from brewing one of the world's most popular beverages is estimated to result in more than one million tons per year in the United States alone, with the majority of that waste getting dumped into landfills.

Future research will continue to focus on improving the purification efficiency of waste coffee grounds-derived activated carbon.

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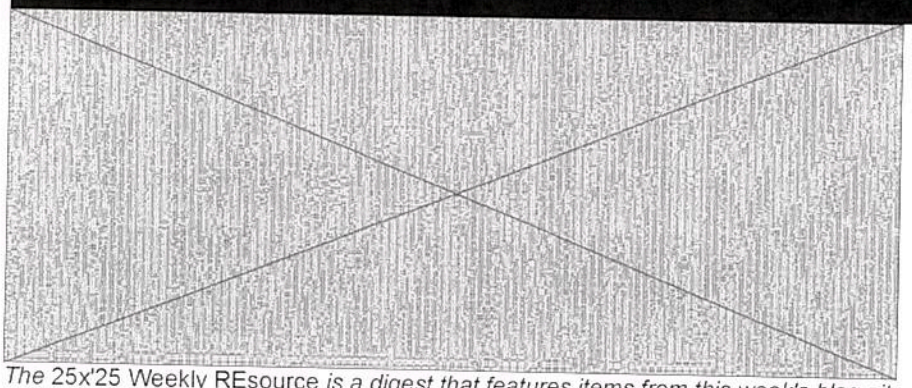

The 25x'25 Weekly REsource *is a digest that features items from this week's blog site, the* 25x'25 REsource, *and other sources. The* 25x'25 REsource *and the* 25x'25 Weekly REsource *complement the role of* 25x'25 *as an objective and trusted source of information on agricultural and forestry renewable energy and climate solutions. Also, visit us at our* Facebook page *and follow us on* Twitter.

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Our Featured Blogs

EPA Demonstrates the Flexibility Needed to Implement the RFS Equitably

Dominating the news in the biofuels industry this week is the announcement by EPA of the volumetric requirements for 2013 under the federal Renewable Fuels Standard (RFS). The fact that the agency finally set the amounts of advanced biofuels, including cellulosic ethanol and biodiesel, among others, some eight months into the year underscores the complexities involved as consumer fuel consumption falls well below the levels anticipated when the RFS was updated back in 2007. Placing further

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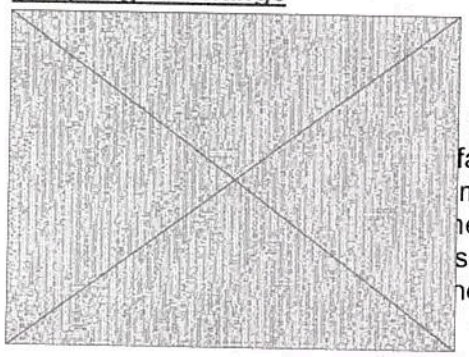
Another emphasis on the difficulties regulators are facing in the current biofuels market are EPA's decision to significantly reduce the volume of cellulosic ethanol required this year, from the 14 million gallons proposed early this year down to 6 million gallons. Of even greater significance is the agency's vow to "use flexibilities in the RFS statute to reduce both the advanced biofuel and total renewable volumes in the forthcoming 2014 RFS volume requirement proposal." The total renewable fuel requirement for next year was set to climb to 18.15 billion gallons, up from this year's 16.55 billion gallons. Read more...

CARD Study Says E85 Can Break the 'Blend Wall'

The so-called ethanol "blend wall" can be overcome and requirements set under the federal Renewable Fuel Standard (RFS) can be met in 2014 and beyond through increased use of attractively-priced E85, according to a new economic analysis by the Center for Agricultural and Rural Development at Iowa State University.

Adapting to Change



hottest on record in the United States, this guest farmer, a former president of the Nebraska Farm member with the American Farm Bureau Federation ember, offers some timely comments on efforts he soil quality, save water and adapt to extreme nd corn operation. Read more...

"Pricing E85 low enough to generate fuel cost savings has the potential to quickly increase ethanol consumption, perhaps by three billion gallons over the next year or two," write Profs. Bruce Babcock and Sebastian Pouliot, authors of "Price It and They Will Buy: How E85 Can Break the Blend Wall." "Rather than being a physical barrier to increased ethanol consumption, the E10 blend wall is an economic barrier that can be overcome by increasing the incentive for drivers to use E85 to fuel their vehicles."

The analysis demonstrates how the RIN market works to lower the effective cost of E85 at the retail level, and explains the interaction among corn, ethanol, gasoline and RIN prices.

"Current RIN (Renewable Identification Number) prices are high enough to achieve modest increases in ethanol consumption above 13 billion gallons and to create incentives to increase the ability to consume lower-carbon ethanol in 2016 and beyond," according to the report. "Current high RIN prices create a large incentive for oil companies to increase consumption of E85 because expansion in E85 consumption will decrease RIN prices."

Headlines of Note

The authors conclude that it would be less expensive for oil companies to invest in E85 infrastructure than it would be to continue to pay high RIN prices.

News of interest to our 25x'25 Partners and advocates for a clean energy future:

The report notes that the current stock of flex fuel vehicles (FFVs) has the capacity to conservatively consume 6.6 billion gallons of ethanol annually, and that more FFVs are being produced by automakers. The report assumes that consumers will put FFV owners have access to E85 within five miles from their home.

- Google - Leading the Way On Renewable Energy
- Groups Announce Brazilian Biofuel Trade Mission
- Lowering Prices on Biofuels Offers Navy Hope
- New Report Provides First Detailed Look At Distributed Wind Across The United States
- NREL Determines Land Area Needed For Solar Power
- NREL Pursues Greater Efficiency for Solar Panels
- Renewable Fuel Policy Instability Is a Jobs and Investment Killer
- Renewable Fuels Get a Boost
- RFS Hasn't Hurt the Poultry Industry
- State Renewable-Energy Laws Turn Out to be Incredibly Hard to Repeal
- U.S. Renewable Energy Tops Record in 2012
- Utility CLEAN Programs Driving Distributed Solar
- A Must-Read By Navy Secretary Ray Mabus: Biofuel And The 'Eco-Arms Race'

Babcock and Pouliot say that RINs will encourage increased ethanol consumption only if EPA resists pressure from the oil industry to dramatically reduce RFS requirements in 2014, noting that EPA's final RFS requirements for next year and beyond must be "significantly above the E10 blend wall" in order for RINs to sufficiently drive E85 demand."

Bob Dinneen, president and CEO of the Renewable Fuels Association, says the study underscores the fact that there are workable and economic pathways around the so-called E10 blend wall.

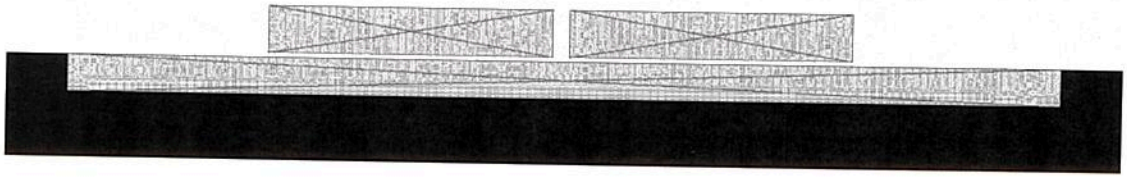
"The CARD study exposes the absurdity of Big Oil's contention that RFS requirements in 2014 and beyond can't be met," he said. "In addition to E15, increased E85 sales offer a clear and sensible pathway to compliance for obligated parties in the next several years."

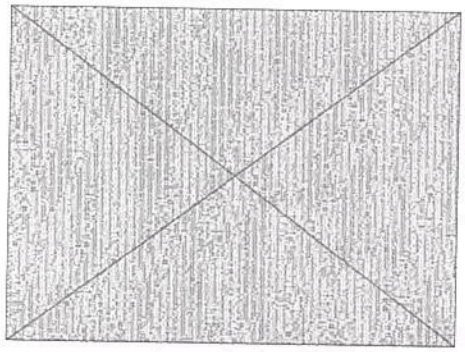
Upcoming Events

Events of interest to 25x'25 partners and other renewable energy stakeholders can be found by clicking here.

25x'25 Sponsors

Federal Report Shows 2012 a Record Year for Added Wind Capacity





At the same time, even with a short-term extension of federal tax incentives now in place, the U.S. wind power industry is facing uncertain times, the report says, adding that it will take time to rebuild the project pipeline, ensuring a slow year for new capacity additions in 2013.

"Continued low natural gas prices, modest electricity demand growth, and limited near-term demand from state renewables portfolio standards (RPS) have also put a damper on industry growth expectations," the report states. "In combination with global competition within the sector, these trends continue to impact the manufacturing supply chain. What these trends mean for the medium to longer term remains to be seen, dictated in part by future natural gas prices, fossil plant retirements, and policy decisions, although recent declines in the price of wind energy have boosted the prospects for future growth."

Among the key findings in the latest Wind Technologies Market Report is that wind power additions hit a new record in 2012, with 13.1 GW of new capacity added in the United States and $25 billion invested. Wind power installations in 2012 were more than 90 percent higher than in 2011 and 30 percent greater than the previous record in 2009. Cumulative wind power capacity grew by 28% in 2012, bringing the total to 60 GW. The report also shows wind power represented the largest source of U.S. electric-generating capacity additions in 2012, constituting 43 percent of all nameplate capacity additions in 2012, overtaking natural gas-fired generation as the leading source of new capacity.

After leading the world in annual wind power additions from 2005 through 2008, and then losing the mantle to China from 2009 through 2011, the United States narrowly regained the global lead in 2012, representing some 29 percent of global installed capacity in 2012, a steep rise from the 16% registered in 2011. However, a number of countries are beginning to achieve high levels of wind energy penetration: end-of-2012 installed wind power is estimated to supply the equivalent of nearly 30 percent of

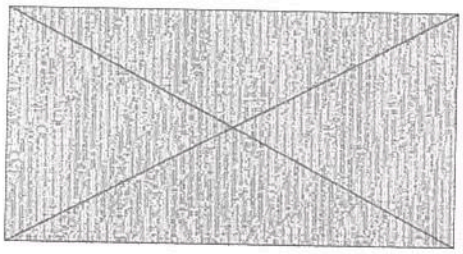
Denmark's electricity demand, compared to approximately 18 percent for Portugal and Spain, 16 percent for Ireland, and 10 percent for Germany. In the United States, the cumulative wind power capacity installed at the end of 2012 is estimated, in an average year, to equate to roughly 4.4 percent of electricity demand.

Among a large sample of wind projects installed in 2012, the capacity-weighted average installed cost stood at nearly $1,940/kW, down almost $200/kW from the reported average cost in 2011 and down almost $300/kW from the reported average cost in both 2009 and 2010.

The extension of the federal Production Tax Credit (PTC) in January 2013, as well as the ability to take the 30 percent investment tax credit (ITC) in lieu of the PTC - both applicable to wind power projects begun before the end of this year, - helped restart the domestic wind market and are expected to spur capacity additions in 2014 as projects that begin construction in 2013 reach commercial operations.

ACEEE Exec Says Energy Efficiency on Congressional Agenda after Recess

The executive director of the American Council for an Energy Efficient Economy says the Senate is poised to consider legislation that boosts energy savings through building codes, industrial practices and energy efficiency improvements in federal facilities.



Steven Nadel says in a blog posted on the ACEEE Web site this week that just prior to the August recess that began last week, the Senate made the Energy Savings and Industrial Competitiveness Act (S. 1392) the official order of business on the Senate floor when members return Sept. 9.

The bill, which was drafted by Sens. Jeanne Shaheen (D-NH) and Rob Portman (R-

OH), is expected to draw dozens of amendments from members on both sides of the aisle that will address energy efficiency and mortgage underwriting rules, voluntary efficiency programs for leased buildings, and energy efficiency in schools and data centers.

Nadel says the bill will likely draw more controversial amendments, including measures related to President Obama's climate plan and the Keystone pipeline.

"These latter amendments are mostly political statements, and if they get a vote, are unlikely to pass," Nadel writes. He said ACEEE will release an analysis of the bill and likely amendments on Sept. 4.

He says key members in the House have indicated that the House will take up a companion bill introduced by Reps. David McKinley (R-WV) and Peter Welch (D-VT) after the Senate acts. Nadel noted that a hearing was set on the McKinley-Welch bill just before recess, but was delayed until after due to scheduling issues.

Nadel also projects that the two bills will likely differ in some respects, prompting conference committee negotiations, perhaps early in 2014.

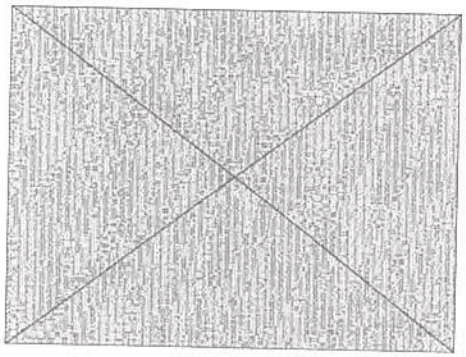
But the ACEEE leaders also says there are contentious issues to address when Congress returns, including funding the government after September 30th and increasing the federal debt ceiling. He said that may delay Senate floor action on the energy efficiency legislation until November, with the House to follow.

"Still, it is a good sign that the one energy topic the House and Senate appear to agree upon is energy efficiency," Nadel writes.

EPA Screens 66,000 Contaminated Sites for Renewable Energy Potential

EPA this week updated its RE-Powering Mapping and Screening Tool, which now provides preliminary screening results for renewable energy potential at 66,000 contaminated lands, landfills, and mine sites across the country. That's up from a

previous 24,000 sites.



The RE-Powering America's Land Initiative, started by EPA in 2008, encourages development of renewable energy on potentially contaminated land, landfills and mine sites when it is aligned with the community's vision for the site.

"We see responsible renewable energy development on contaminated lands and landfills as a win-win-win for the nation, local communities, and the environment," said Mathy Stanislaus, assistant administrator for the Office of Solid Waste and Emergency Response.

The Obama administration has set a goal to double renewable electricity generation by 2020, Stanislaus said. "By identifying the renewable energy potential of contaminated sites across the country, these screening results are a good step toward meeting national renewable energy goals in order to address climate change, while also cleaning up and revitalizing contaminated lands in our communities."

Pulling from EPA databases of potentially and formerly contaminated lands, as well as partnering with state agencies from California, Hawaii, Oregon, Pennsylvania, New Jersey, New York, West Virginia, and Virginia, the RE-Powering initiative nearly tripled the universe of sites. Also, working in collaboration with the DOE's National Renewable Energy Laboratory (NREL), RE-Powering developed screening criteria for solar, wind, biomass and geothermal potential at various levels of development. The sites are tracked by EPA and selected state agencies.

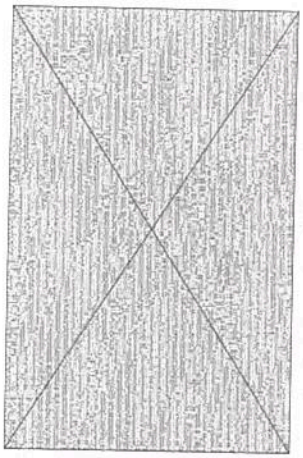
The updated screening provides insight into the significant potential for renewable energy generation on contaminated lands and landfills nationwide, EPA says. For

example, the agency identified more than 10,000 contaminated sites with the potential to install a 300-kilowatt solar array or greater. Based on mapped acreage, these sites could cumulatively host solar energy systems that capture greater than 30 times more solar energy than all renewable energy systems operating in the United States today.

Over the past five years, more than 70 renewable energy projects have been installed on contaminated lands or landfills. The projects represent just more than 200 megawatts of installed capacity, which could power approximately 30,000 homes, and provide a foundation for future development as demonstrations of the latest technologies in both renewable energy and remediation design.

U.S., Brazilian Trade Groups Set Joint Biofuel Trade Mission in Brazil

Biofuel trade groups from the United States and Brazil have set up a first-of-its-kind joint mission "to improve and enhance biofuels trade by matching businesses seeking greater trade opportunities in ethanol and other biofuels.' The mission would also promote green technology designed to expand biofuel production.



Some 15 companies will be selected for the mission, which is the product of a partnership between the Renewable Fuels Association (RFA), Brazilian Sugarcane Industry Association (UNICA), and the Advanced Biofuel Association (ABFA), targeting the Brazilian cities of São Paulo and Recife.

The trade mission, which will be held Sept. 30 to Oct. 2, will focus on introducing

importers and exporters of biofuel and biofuel technology, in an effort to enhance bilateral relationships and enhance trade opportunities.

The effort was engineered through a partnership between the three trade groups and the Brazil-U.S. Business Council (BUSBC), which represents key businesses from the United States and Brazil that have interests in promoting free trade between the two countries. The BUSBC, which is a part of the U.S. Chamber of Commerce, is helping to administer the matchmaking mission as part of its Export Green Initiative, which was created through funding from the International Trade Administration of the U.S. Commerce Department to promote U.S. exports of renewable and green commodities and technologies.

"As the world's largest biofuels producers and exporters, the United States and Brazil recently removed trade barriers protecting their domestic ethanol industries and have taken steps towards greater energy cooperation, particularly in advanced technologies," said Elizabeth Farina, president and CEO of UNICA. "We hope this partnership among leading trade associations will represent another important milestone towards developing a global biofuels market that provides clean, affordable and sustainable solutions to the planet's growing energy needs."

ABFA President Michael McAdams said that with several of his group's members already commercializing technology in Brazil, "the time is now to expand upon the relationship on biofuels between the two largest producers in the world. With the global population headed to nine billion people and growing climate change concerns, advanced biofuels from our countries are needed and this partnership will help advance that crucial goal."

Coalition Working to Build Biofuel-Accessible 'Green Corridor' Along I-75

A number of clean energy advocacy groups are promoting the establishment of the longest biofuels corridor in the United States.

Led by the East Tennessee Clean Fuels Coalition and in collaboration with a wide array of government, academic and business interests, the initiative aims to establish Interstate 75 as the nation's longest biofuels corridor, enabling travel along the entire 1,786 mile-length using either of two primary biofuels, E85 or B20.

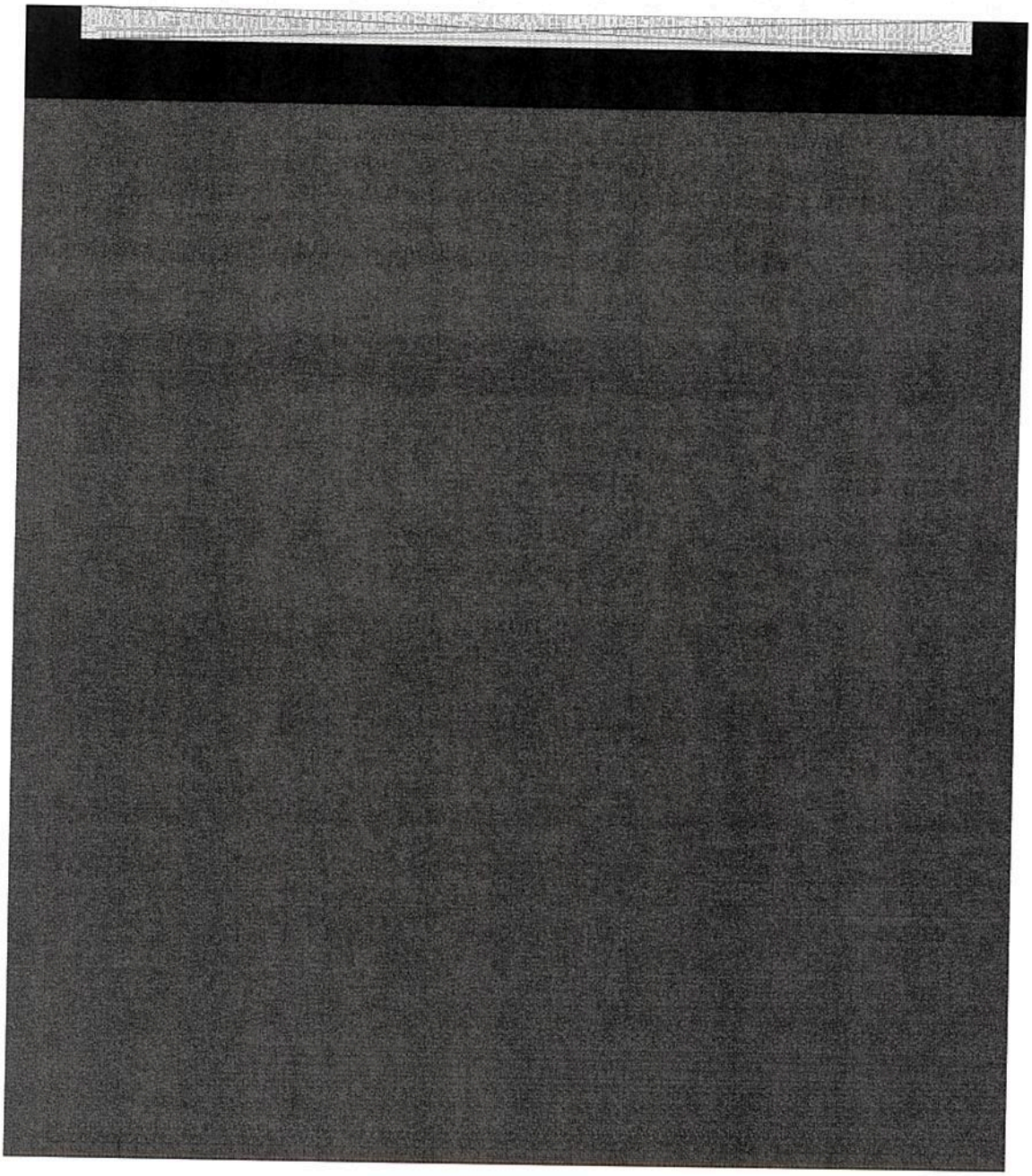
The project seeks to add 25-30 public E85 or B20 pumps along I-75, first filling in the gaps where no such stations exist, working to place each biofuel no greater than 200 miles from the next or last biofuel pump of the same type. The project would place the new pumps within a maximum distance of three miles from an I-75 exit.

I-75 extends from the U.S.-Canada border at Sault St. Marie, MI, and extends south to Miami, FL. Another goal of the initiative is to build the refueling infrastructure in cities along the corridor to further enhance the growth of the renewable fuels in U.S. cities.

The project, organizers says, was undertaken to "support American fuels and jobs, keep Americans' money in America, reduce oil dependence, support alternative fuels and renewable fuels continued production and use in the U.S., reduce emissions including greenhouse gases, and build partnerships that put America first."

For the proposal, a total of 21 different organizations came together to be part of the project (see our Partners page to learn about all the partners).

Each of the 21 project partners has brought - and is still bringing - different abilities or plusses to the initiative to ensure the success of the $1.8 million project. Also included in the collaborative effort are station owners, fuel marketers and similarly aligned companies that can help the coalition place pumps largely at existing stations and ensure assistance in marketing the fuel locally. The initiative provides up to $30,000 in a 50/50 cost match to the station owner or agent to assist them with their costs in making the fuel available to the motoring public.



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From: Geoff Cooper
Sent: Mon 8/5/2013 5:26:09 PM
Subject: EWG testimony regarding EPA RFS2 RIA GHG analysis for corn ethanol
EWG%20Testimony%20on%20RFS.PDF

Gentlemen,

The Environmental Working Group recently provided testimony to the House Energy & Commerce Committee suggesting that the RFS has actually led to increased GHG emissions, "according to EPA's own data." The testimony is attached. The key statement from EWG is:

- "…the Environmental Protection Agency's own analysis has since shown that the lifecycle greenhouse gas emissions of corn ethanol **were** higher than gasoline last year (2012) and **will be** higher in 2017. All but three corn ethanol production pathways **increased** emissions in 2012, and only nine corn ethanol production pathways are expected to meet greenhouse gas reduction standards for corn ethanol in 2017."

These statements are made in a "matter of fact" manner that suggests there is actual empirical data supporting these claims. I am aware that EPA's original analysis for the RIA showed that some sources of corn ethanol would incur a carbon debt that would take years to pay off due to the significant upfront *hypothetical* ILUC emissions assigned through your FASOM/FAPRI/Winrock modeling framework. EWG's testimony appears to be characterizing EPA's 2012-era estimate from your 2009/2010 hypothetical scenario analysis as ACTUAL emissions that were somehow empirically measured or quantified in 2012. Yet, I am not aware that EPA has attempted to measure or estimate, based on empirical evidence, what the actual GHG emissions from corn ethanol and use were in 2012. Has the Agency done such an analysis estimating **actual** GHG impacts of corn ethanol in 2012 or any other year retrospectively?

In any case, this statement from EWG is obviously causing much concern on the Hill. We've heard from several Congressional staff who are asking for an explanation. This is precisely why Bob Dinneen and I suggested to the Agency last fall that a statement from EPA regarding the latest available science on ILUC and the (non)occurrence of land use changes due to RFS in the Amazon would be helpful for context. Some are using your RIA analysis as an indication or "proof" of "what *is* happening because of the RFS," when in fact it is just a highly uncertain, hypothetical scenario analysis based on a set of debatable assumptions and model inputs. We aren't necessarily asking that the Agency completely redo its corn ethanol modeling analysis;

rather, we are simply asking that EPA help contextualize what its RIA results do and don't mean, and speak to the advances in the science of LCA/ILUC analysis that have occurred since you published the RIA that may render the RIA estimates invalid. EPA pledged to periodically update its LCA for all biofuels based on developments in the science; yet, we haven't seen any action to revisit—even qualitatively—the original pathways developed for RFS2. Thanks for your time.

Best regards,

Geoff

From: Geoff Cooper
Sent: Tuesday, April 30, 2013 3:02 PM
To: Benjamin Hengst (Hengst.Benjamin@epamail.epa.gov); Camobreco.Vincent@epa.gov; larson.robert@epa.gov
Subject: New ethanol technology/energy use survey paper

Ben, Vince and Bob,

Good afternoon. I just wanted to pass along a new paper by Dr. Steffen Mueller that presents the results of a recent technology survey of the dry mill ethanol industry. I think you will find the results interesting. Specifically, the report found average thermal energy use has been reduced another 9% over the 2008 survey numbers.

	2012 Corn Ethanol	2008 Corn Ethan
Yield (anhydrous/undenatured, gallon/bushel)	2.82	2.78
Thermal Energy (Btu/gallon, LHV)	23,862	26,206
Electricity Use (kWh/gallon)	0.75	0.73
DDG Yield (dry basis) including corn oil (lbs/bu)	15.73	15.81
Corn Oil Separated (lbs/bushel)	0.53	0.11
Water Use (gallon/gallon)	2.70	2.72

Also, I'm not sure if you have been following the House Energy & Commerce Committee's process to examine various aspects of the RFS program (likely in preparation for summer hearings on the RFS). The Committee is releasing a series of white papers on various RFS-related issues; each white paper asks a series of questions to which stakeholders are invited to respond. We are told one of the upcoming white papers will focus on ILUC and lifecycle GHG impacts, and that one of the questions may relate to whether or not the RFS is actually doing anything to reduce GHG emissions today, given EPA's current assessments of lifecycle GHGs for various feedstock/biofuel pathways.

Best regards,

Geoff

Geoff Cooper

Vice President, Research & Analysis

Renewable Fuels Association

16024 Manchester Road, Suite 223

Ellisville, MO 63011

O: 636.594.2284

C: 636.399.4928

From: Geoff Cooper
Sent: Tuesday, December 18, 2012 4:30 PM
To: Benjamin Hengst (Hengst.Benjamin@epamail.epa.gov); Camobreco.Vincent@epamail.epa.gov; Larson.Robert@epamail.epa.gov
Subject: FW: New ethanol LCA paper

Ben, Vince, Bob,

Thanks again for the chance to visit last Friday about ethanol lifecycle analysis. I just received the attached paper by Michael Wang's group at Argonne. It further revises and updates the corn, sugar, and cellulosic ethanol results from his 2011 paper with Purdue. The results:

Lifecycle GHG reductions relative to petroleum gasoline, including land use change emissions

	Range	*Average*
Corn ethanol	19-48%	34%
Sugarcane ethanol	40-62%	51%
Corn stover ethanol	90-103%	96%
Switchgrass ethanol	77-97%	88%
Miscanthus ethanol	101-115%	108%

We think these results further underscore the need for EPA to affirm that average corn ethanol is meaningfully reducing GHG emissions relative to gasoline *today*.

Thanks again for your time and consideration and Happy Holidays.

Regards,

Geoff

	2012 Corn Ethanol	2008 Corn Ethanol
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Testimony of Scott Faber

Senior Vice President for Government Affairs
Environmental Working Group

Before the

Subcommittee on Energy and Power

Of the

House Committee on Energy and Commerce

On

Overview of the Renewable Fuel Standard: Stakeholder Perspectives

July 24, 2013

Thank you for the opportunity to testify. My name is Scott Faber and I am the Senior Vice President for Government Affairs at EWG.

EWG applauds the Subcommittee on Energy and Power of the House Committee on Energy and Commerce for reviewing the Renewable Fuel Standard.

To date, the RFS has failed to deliver the "good" biofuels that could help meet many of our environmental and energy challenges. Instead, the RFS has delivered too many "bad" biofuels that increase greenhouse gas emissions, pollute our air and water, destroy critical habitat for wildlife and increase food and fuel prices. Once promoted as a tool to combat climate change, the corn ethanol mandate of the RFS has instead increased greenhouse emissions, exacerbated our air and water pollution challenges, and driven up the price of staple foods.

Since it was expanded in 2007, the corn ethanol mandate has contributed to plowing up more than 23 million acres of US wetlands and grasslands to plant crops -- an area the size of Indiana. EWG recently analyzed the annually updated satellite data that the US Department of Agriculture uses to track land use and documented this rapid destruction of wetlands and grasslands.[1] Other studies have also documented this dramatic change to

[1] EWG (2012) Plowed Under. http://static.ewg.org/pdf/plowed_under.pdf.

the American landscape.[2] By accelerating conversion of wetlands and grasslands to grow crops, the RFS has driven up greenhouse gas emissions by releasing carbon stored in the soil[3] and by increasing fertilizer applications.[4]

Although the RFS was promoted in 2005 and 2007 as a tool to address climate change, the Environmental Protection Agency's own analysis has since shown that the lifecycle greenhouse gas emissions of corn ethanol were higher than gasoline last year (2012) and will be higher in 2017.[5] All but three corn ethanol production pathways increased emissions in 2012, and only nine corn ethanol production pathways are expected to meet greenhouse gas reduction standards for corn ethanol in 2017.[6]

What's more, new research suggests that the RFS will not achieve long-term greenhouse gas reductions. Researchers found that the cumulative greenhouse gas emissions caused by corn ethanol for the period between 2015 and 2044 to be about 1.4 billion tons – or 300 million tons more than emissions from an energy-equivalent amount of gasoline.[7] In other words, the cumulative lifecycle greenhouse gas emissions from corn ethanol are forecast to be 28 percent higher than those from gasoline. A separate study found that full implementation of the RFS, including the development and use of second-generation biofuels, would "substantially increase the portion of agricultural land needed for biofuel production" and result in almost no change in greenhouse gas emissions.[8]

These studies contradict earlier EPA research – based on hypothetical corn ethanol production in 2022 – that suggested that the 30-year lifecycle greenhouse gas emissions from corn ethanol would be lower than the emissions from an energy-equivalent amount of gasoline.[9] EPA's earlier studies presumed investments and upgrades, such as fuel switching, that are speculative at best, as most corn ethanol is not subject to the greenhouse gas standards of the RFS.

In addition to increasing greenhouse gas emissions, corn ethanol also increases emissions of many other air pollutants, including sulfur dioxide, particulate matter, ammonia,

[2] E.g. Wright and Wimberly (2012), *Recent Land Use Change in the Western Corn Belt threatens Grasslands and Wetlands.*

[3] Clearing forest, pasture or wetland for new cropland to produce biofuels results in decomposition of organic carbon and elevated GHG emissions, creating a "carbondebt" which may take many years for biofuel consumption to "pay down." See EPA (2011), Biofuels and the Environment: Triennial Report to Congress, at 5-9.

[4] Fertilizer applications increase emissions of nitrous oxide, a far more potent greenhouse gas thancarbon dioxide. In 2011, nitrous oxide accounted for about 5% of all US GHG emissions, and nitrous oxide molecules stay in the atmosphere for an average of 120 years. http://epa.gov/climatechange/ghgemissions/gases/n2o.html .

[5] Environmental Protection Agency (2010) Renewable Fuel Standard Program (RFS 2) Regulatory Impact Analysis.

[6] See Docket No. EPA-HQ-OAR-2005-0161-3173.5

[7] Clean Air Task Force (2013), Corn Ethanol GHG Emissions Under Various RFS Implementation Scenarios, included in CATF Comments on EPA RFS 2013 Volume Adjustment. [Hereinafter CATF]

[8] Mosnier, et al. (2013), *Alternative US Biofuel mandates and global GHG emissions: the Role of Land Use Change, Crop Management and Yield Growth.*

[9] CATF at 3.

nitrogen oxides and ozone.[10] In 2011, the National Academy of Sciences found that "overall production and use of ethanol was projected to result in increases in the pollutant concentration . . . Those projected air-quality effects from ethanol fuel would be more damaging to human health that those from gasoline use."[11] In particular, experts have found that, compared to the lifecycle emissions from gasoline, corn ethanol results in significantly greater emissions of particulate matter, which can contribute to respiratory illnesses.[12] As a result, the RFS is complicating state and local efforts to meet particulate matter pollution standards. In addition, RFS2 will raise ozone levels even higher than RFS1.[13] Overall, the increase in emissions caused by the RFS are, according to the National Academy, "projected to lead to increases in population-weighted annual average ambient [particulate matter] and ozone concentrations, which in turn are anticipated to lead to up to 245 cases of adult premature mortality."[14]

Corn ethanol also contributes to significant water quality and quantity challenges. As the number of acres dedicated to corn production has increased – from 79 million acres, on average, between 2000 and 2006 to 90 million acres, on average, between 2007 and 2012 – farmers have applied more nitrogen fertilizer.[15] Nitrogen that washes off farm fields contributes to poor water quality, increasing water treatment costs and creating low-oxygen "dead zones." As the National Academy noted, "the increase in corn production has contributed to environmental and surface effects on surface and ground water, including hypoxia, harmful algal blooms and eutrophication."[16] Water used to irrigate corn ethanol and by ethanol refineries also depletes aquifers and streams. According to various studies compiled by the Academy, producing a gallon of gasoline, on a well-to-wheel basis, consumes far less water than producing a gallon of corn ethanol.[17]

Fortunately, some second-generation biofuels hold far more promise than corn ethanol. Because many of these fuels convert crop wastes or other byproducts into fuel, some second-generation fuels do not contribute to the conversion of land or increase the use of farm chemicals.[18] Unfortunately, the marketplace is saturated by corn ethanol, blocking the commercial development of promising second-generation fuels. While corn ethanol refiners currently have the capacity to produce 14.7 billion gallons, gasoline refiners can

[10] Wagstrom and Hill (2011), *Air Pollution Impacts of Biofuels*, in Gasparatos and Stromberg, Socioeconomic and Environmental Impacts of Biofuels: Evidence from Developing Nations Cambridge University Press, England. See also

[11] National Academy of Sciences (2011), *Renewable Fuel Standard: Potential Economic and Environmental Effects of US Biofuels Policy*, at 246. [Hereinafter NAS].

[12] Tessum, et al. (2012), *A Spatially and Temporally Explicit Life Cycle Inventory of Air Pollutants from Gasoline and Ethanol in the United States*; *See also* Cook, et al., (2010) *Air Quality Impacts of Increased Use of Ethanol under the United States' Energy Independence and Security Act*

[13] Environmental Protection Agency, Renewable Fuel Standard Program (RFS 2) Regulatory Impact Analysis (2010) at 602.

[14] NAS at 206.

[15] Testimony of Joseph Glauber, Chief Economist, USDA, before the Subcommittee on Energy and Power of the House Committee on Energy and Commerce, June 26, 2013. Corn acres reached 97.2 millionacres in 2012.

[16] NAS at 10.

[17] *Id.* at 227.

[18] Tilman, et al. (2009), *Beneficial Biofuels – The Food, Energy, and Environmental Trilemma; See also* Wagstrom and Hill.

only blend 13.4 billion gallons of ethanol into the fuel supply, what is commonly known as the "blend wall." Expected declines in fuel consumption, driven largely by fuel efficiency standards, will further reduce the amount of ethanol that can be blended into gasoline, and significant infrastructure and engine constraints limit the use of higher ethanol blends.

To allow second-generation biofuels to gain a foothold in the marketplace, Congress must reform the RFS to phase out the mandate for corn ethanol. Accelerating development of promising second-generation fuels is critical to efforts to reduce the carbon intensity of the overall fuel supply, but this is not happening quickly enough to offset the negative environmental impacts of conventional biofuels. There is little evidence that the RFS, as currently designed, is providing sufficiently powerful incentives to develop these fuels. The Energy Information Administration has repeatedly reduced its predictions for cellulosic biofuel production by 2022: from less than 3 billion in 2012,[19] to less than 1 billion gallons in January 2013,[20] to less than 500 million gallon in April 2013.[21] At a minimum, Congress should "level the playing field" by demanding that all corn ethanol production meet the same high greenhouse gas reduction standards as other biofuels.[22]

Accelerating development of second-generation fuels that convert wastes into fuels could have other benefits.[23] In particular, phasing out the corn ethanol mandate and allowing second-generation fuels to meet current marketplace demand for ethanol could reduce food and feed prices. Between 2005 and 2012, annual corn ethanol production grew from less than 4 billion gallons to almost 14 billion gallons. As a result, the share of corn diverted from food and feed supplies has increased from 6 percent to 40 percent.[24] Expanding corn production has only partially offset the rapid growth in demand for corn ethanol, resulting in significantly higher corn prices. Although many factors have contributed to recent price increases, experts estimate that the rapid expansion of corn ethanol accounted for at least one-third of the increase.[25] Rising demand for corn also drives up the price of other crops such as wheat.[26] Unless we reform the RFS to speed up development of second-generation fuels, our ethanol policies will continue raise the cost

[19] US EIA, Annual Energy Outlook 2012 (June 2012). The AEO 2013 (April 2013) concludes that cellulosic biofuel production will not grow until after 2013.

[20] US EIA Deputy Administrator How Gruenspecht, (January 2013), *Biofuels in the United States: Context and Outlook*

[21] US EIA, AEO 2013, at 83. See fig. 100.

[22] In addition, Congress should reject new subsidies for corn production and instead support common-sense reforms such as payment limits and means testing. Second-generation fuel feed-stocks are generally not eligible for farm subsidies.

[23] Some second-generation fuels, under certain scenarios, increase greenhouse gas emissions and food and feed prices.

[24] World Agricultural Outlook Board, USDA, World Agricultural Supply and Demand Estimates (2013).

[25] E.g. Babcock and Fabiosa (2011) *the Impact of Ethanol and Ethanol Subsidies on Corn Prices: Revisiting History*. CARD, Iowa State University.

[26] Griffen and Soto (2012). *US Ethanol Policy: The Unintended Consequences*

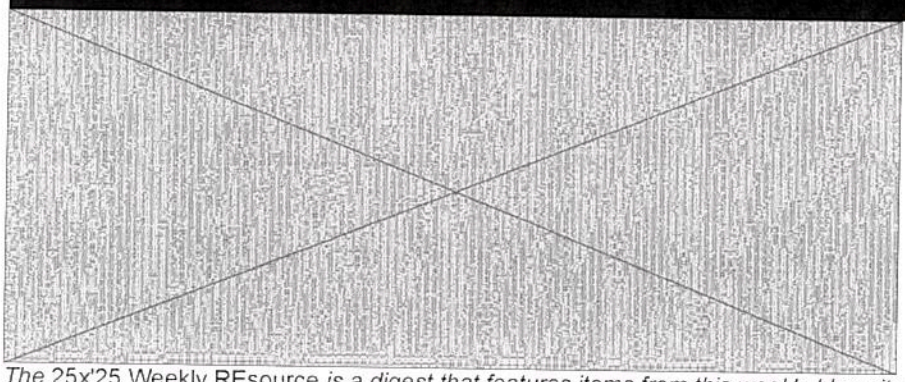
of basic staples for American consumers and increase the number of food-insecure people around the globe.[27]

In conclusion, the rapid expansion of corn ethanol production has increased greenhouse gas emissions, worsened air and water pollution, and driven up the price of food and feed. By contrast, some second-generation biofuels could significantly reduce greenhouse gas emissions without creating new environmental challenges or increasing food prices. So long as corn ethanol saturates the marketplace for ethanol, there will be little incentive to develop these promising new fuels.

[27] Condon, Klemick, and Wolverton (2013). *Impacts of Ethanol Policy on Corn Prices: A Review and Meta-Analysis of Recent Evidence.*

To: Hengst, Benjamin[Hengst.Benjamin@epa.gov]
From: 25x'25
Sent: Fri 7/12/2013 4:14:51 PM
Subject: Weekly REsource for July 12, 2013

[redacted]



The 25x'25 Weekly REsource *is a digest that features items from this week's blog site, the* 25x'25 REsource*, and other sources. The* 25x'25 REsource *and the* 25x'25 Weekly REsource *complement the role of* 25x'25 *as an objective and trusted source of information on agricultural and forestry renewable energy and climate solutions. Also, visit us at our* Facebook page *and follow us on* Twitter.

[redacted]

Our Featured Blog

Biofuel Stakeholders Must Stand Ready to Challenge Misinformation

It almost seems like an annual occurrence: Some interest tied to the food or oil industry, or some ideologue with an abiding, if not irrational, antagonism toward to burning virtually anything to power our cars and trucks makes the phony case that growing corn for ethanol takes away from global food supplies. Let's get this straight right now: U.S. growers produce enough corn to meet all three of the crop's critical uses - food, feed and fuel. U.S. ethanol production has increased eight-fold since the start of the

STAY CONNECTED

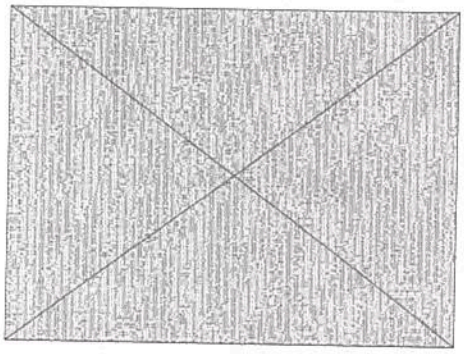
Millennium Driven by consumers and policy makers demanding an alternative to volatilely price foreign oil. The results of increased production include huge economic benefits, particularly in rural areas; cleaner air and greater national energy security.

Read more

25x'25 Steering Cmte. Member Nominated Asst. Secretary of the Navy

Vice Adm. Dennis V. McGinn (Ret.) has been nominated by President Obama to be the Navy's assistant secretary for energy, installations and environment.

McGinn is the president and CEO of the American Council on Renewable Energy and is a member of the 25x'25 Steering Committee.



The nomination is seen as a reaffirmation of the administration's support of the Navy's pursuit of advanced biofuels for ships, vehicles and planes. Navy Secretary Ray Mabus says the branch will get half of its energy from non-petroleum-based sources.

McGinn, a widely recognized energy and national security, currently serves as co-chairman of the CNA Military Advisory Board advising policy makers on the nexus of energy and national security, and as an international security senior fellow at the Rocky Mountain Institute.

He is also on the Steering Committee of the Energy Future Coalition, a member of the United States Energy Security Council, and a member of the Bipartisan Policy Center Energy Board. He was previously with Battelle Memorial Institute, where he was a corporate officer and led the energy, transportation, and environment division.

McGinn's served 35 years in the Navy, where he served as a naval aviator, test pilot, aircraft carrier commanding officer, and national security strategist. His capstone

Headlines of Note

assignment with the Navy was Deputy Chief of Naval Operations for Warfare Requirements and Programs at the Pentagon, where he oversaw the development of future U.S. Navy capabilities. In an earlier assignment, he also commanded the U.S. Third Fleet.

News of Interest to our 25x 25 Partners and advocates for a clean energy future:

American Renewable Energy Is Powering the American Energy Transformation

A Naval Academy graduate, McGinn attended the national security program at the Kennedy School of Government at Harvard University and was a Chief of Naval Operations strategic studies fellow at the U.S. Naval War College.

Clean Energy Investment Rises 22% Led by U.S., China

Georgia PSC Orders More Solar Power

In a recent op-ed posted on the *Huffington Post* Web site, McGinn said, "It is time all of us take a hard look at every aspect of America's energy future and see things the way they really are. Renewable energy is an energy security and economic game-changer and needs to be treated as such.

Germany Sets Solar Power Record (Again) - 23.5 GW

Going for a Million Solar Roofs in Colorado

Military Alternative Fuel Fleet Spending to Hit '$926m by 2020'

"From private investment to gigawatt-scale power, clean energy is truly powering a new golden age of American energy development. It's time for our policymakers to act and help make renewable energy's unmatched potential a reality," he said.

Solar Market Seen Exceeding $154 Billion by 2020, Navigant Says

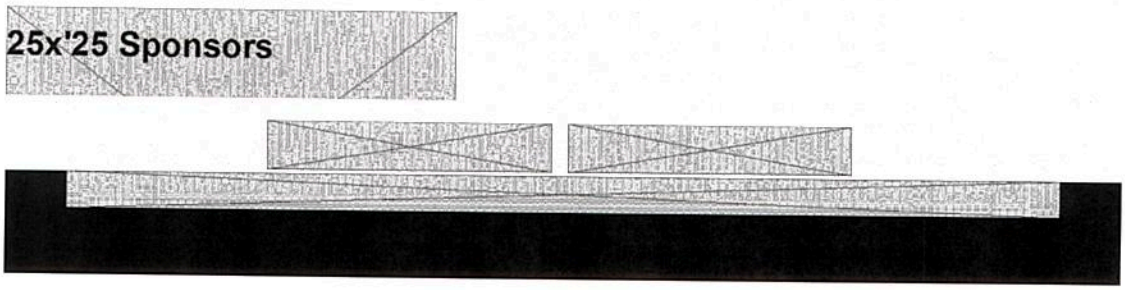
U.S. Joins the World's 10-Gigawatt Club For Solar Power

Questions Linger over Farm Bill Adopted by House

Upcoming Events

The House on Thursday adopted by a narrow, 216-208 margin a farm bill that passed on what was virtually a partisan basis. No Democrats voted for the five-year legislation. Twelve Republicans also voted against it.

Events of interest to 25x 25 partners and other renewable energy stakeholders can be found by clicking here.



Supplemental Nutrition Assistance Program, claiming it was the only way to gain passage of that portion of the original measure that authorizes farm programs, including crop insurance. Conservative House members are seeking funding cuts in the food programs.

The bill passed Thursday contains language that authorizes several farm energy programs, but offers no mandatory funding. A version passed by the Senate earlier this year included an energy title with some $900 million in mandatory funding over the next five years.

The vote still leaves the fate of the farm bill in question. Farm state lawmakers have traditionally joined their urban colleagues in leveraging their causes to gain passage of a measure that includes both farm and nutrition programs. The cost of the nutrition title is nearly $80 billion, or nearly 80 percent of the cost of the original bill. The last time a farm bill passed the House without a nutrition package was 40 years ago.

While GOP House leaders say they will address federal nutrition programs in future legislation, the Senate is expected to press for its larger measure, including nutrition programs, when the farm bill goes to a conference committee.

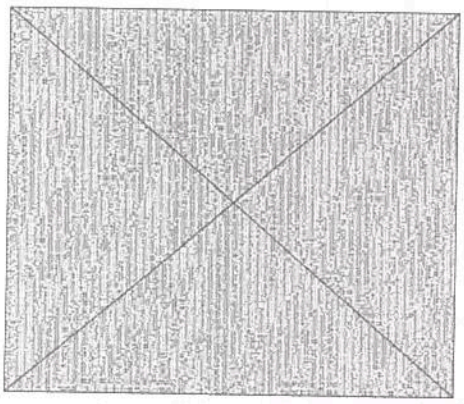
The American Coalition for Ethanol (ACE) says it will work to encourage the House-Senate conference committee to finalize legislation that mirrors the Senate version of the farm bill.

"The Senate version contains support for important Energy Title initiatives, particularly mandatory funding for the Rural Energy for America Program (REAP)," said Brian Jennings, ACE executive vice president. "These REAP funds provide vital cost-share assistance to help petroleum marketers make upgrades or install new equipment at retail stations, ensuring consumers have access to renewable and affordable fuels such as ethanol."

In other congressional news, the House this week adopted and energy appropriations bill that severely cuts spending on renewable energy programs and research in fiscal 2014. A Senate version is expected to increase spending on research, including the Advanced Research Projects Agency - Energy, which has helped with the development of advances in solar, wind and other renewable energy technologies.

Analysis Shows State Renewable Standards Holding Steady or Expanding

The most recent in a series of white papers published by Colorado State University's Center for a New Energy Economy shows state Renewable Portfolio Standards (RPS) has held steady or expanded during this year's state legislative sessions.



The series aims to aim to provide insight into the direction states are going in advanced energy.

"Challenges to the nation's 30 mandatory and seven voluntary [RPSs] are not a new trend," the paper reports. The paper cites in particular those attempts this year to repeal or modify state standards based on the "Electricity Freedom Act," model legislation developed by the conservative American Legislative Exchange Council's (ALEC).

As of mid-June, the center's AEL Tracker database contained 121 unique RPS-related bills from this legislative session alone. The latest white paper takes stock of how state RPS polices have fared as the legislative sessions come to a close, and which types of proposed policy changes were most common.

"At the beginning of 2013, there was a great deal of public discourse around efforts to roll back state renewable energy generation standards," the center says. "Those efforts appear to have failed thus far in the 2013 legislative session."

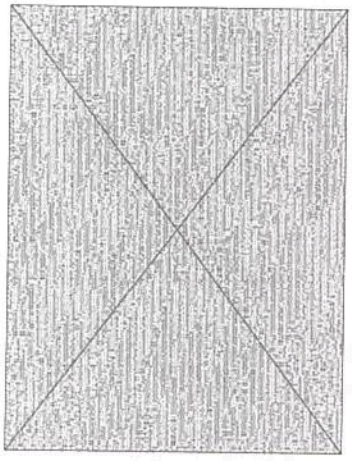
While more than 30 states voted on or considered legislation this session to change their Renewable Portfolio Standards (RPS), only eight enacted modifications or increases to existing policies. None rolled back an existing state standard.

The tracker database contains an inventory of more than 2,300 state advanced energy bills, including the 121 bills introduced this session that would increase, modify or decrease RPS policies. Of the 121 introduced bills, 16 have been enacted to date, none of which would repeal or delay RPS statutory requirements or generation deadlines.

"Despite attempts to roll back state renewable energy policies this year, the net impact thus far in the 2013 session is that the U.S. renewable energy market is stronger, particularly in the three states that increased their RPS standards - Nevada, Colorado and Minnesota," said Bill Ritter, Jr. director of the center. "States are clearly defending their RPS policies and in some cases, increasing them," he added.

NAFO: New Biomass Market Data Will Inform EPA's GHG Rule Amendments

A new report updating data projecting the impact of bioenergy development on sustainable forestry in the United States has been released by the National Alliance of Forest Owners (NAFO), which says the new projections should better inform EPA as it develops updated greenhouse gas (GHG) emission regulations.



"Good policy requires good information," said Dave Tenny, NAFO president and CEO in

a blog posted on the alliance Web site this week. "As the EPA prepares amendments to its 2010 [GHG "Tailoring Rule"] to address biomass carbon emissions, it is important that the agency's analysis be informed by current information reflecting how the biomass energy world has changed since 2010."

Tenny said industry leaders questioned findings released earlier this year by the U.S. Forest Service, which projected impacts of biomass energy development on forest resources in the its 2010 Resources Planning Act Assessment (RPA). The NAFO CEO said the RPA is a snapshot of forest conditions and trends in the nation.

"However, the outlook in the RPA is heavily influenced by when the snapshot is taken. In this case, biomass energy projections were based on an outlook in 2010 that was far different than today," Tenny said.

The forestry leaders said the RPA "appropriately reports" that high land values for development and other competing uses are reducing forestland in some areas of the country thereby reducing carbon storage in private forests.

"However, the RPA also bases a portion of the loss of carbon storage in private forests on an unrealistic projected increase in demand for wood bioenergy that is many times higher than even the most optimistic projections in 2013," he said.

To remedy the inaccurate projection, NAFO called on market experts to work with the Forest Service to review the RPA projections and provide an updated outlook based on market conditions in 2013. As a result, the most recent projections reveal the vast majority of wood use by 2023 will still be for traditional forest products such as lumber, paper, composites and other products. Domestic and offshore forest bioenergy will account for somewhere between 4 and 9 percent of overall wood use in the United States.

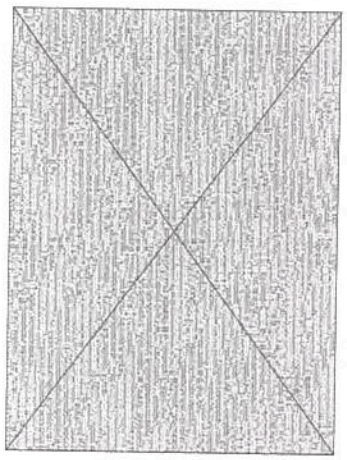
"The experts found no viable scenario generating wood demand levels at the regional or national level reducing net forest growth," Tenny said. "In other words, our private forests are more than capable of continuing the triple bottom line of supporting existing and emerging markets while continuing to store net carbon through sustainable forest management."

He said international experts predict that new markets like bioenergy "will promote rather than discourage more forest growth and result in more rather than less net carbon in our forests over the long term."

The new information, Tenny said, should help EPA craft amendments to the Tailoring Rule based on accurate market data.

25x'25 Commends Miss. PSC for New Energy Efficiency Rules

The 25x'25 Alliance commended the Mississippi Public Service Commission for setting a new course for the state by adopting rules and standards Thursday that will ensure increased energy efficiency and conservation for public electric and gas utility ratepayers.



The new rules require utilities and electric cooperatives, including electric power associations, to implement energy efficiency programs that will help residential, commercial and industrial consumers reduce their energy usage and their energy bills, while still maintaining comfort, security and productivity.

Specifically, the plan requires each electric and natural gas utility serving more than 25,000 customers to file a "Quick Start" plan - portfolio of programs that have been

widely implemented in other jurisdictions, have well-established track records and provide benefits to a majority of utility customers - within 6 months and to implement within 4 months of approval. Examples of Quick Start programs are customer education, energy audits, inspection and tune up of A/Cs, lighting, appliances, DR, weatherization, new homes program, commercial and industrial incentives and tune ups.

Since January 2010, a wide array of stakeholders and energy efficiency advocates, including 25x'25, has worked with the Commission, the utilities and with each other to craft a set of rules that will guide the state to new level of energy resource awareness and responsibility.

"Mississippi, which has long ranked near the bottom in energy efficiency effectiveness ratings, will now make a tremendous leap upward," Brent Bailey, 25x'25 State Activities Coordinator, wrote in a message to stakeholder partners in the state. "More importantly, energy consumers will now have access to technical, financial and educational resources and other incentives to implement proven energy efficiency measures and solutions."

The American Council for an Energy-Efficient Economy ranked Mississippi 51st in overall energy efficiency policy effectiveness in its 2012 State Energy Efficiency Scorecard. The list also included the District of Columbia. In terms of electricity expenditures, Mississippians spend more than anyone else in the nation as a percentage of their median household income according to EIA data.

Karen Bishop, director of the Mississippi Development Authority's Energy and Natural Resources Division, applauded the PSC's adoption of the energy efficiency rules, which, she said, will strengthen the Mississippi economy and increase quality of life for our citizens.

"The Commission's action complements and reinforces the Governor's Energy Works roadmap, building positive momentum for economic development and workforce growth in Mississippi," she said. "We look forward to working with 25x'25 and other partners to build consumer awareness of these programs, once the rules are implemented."

"The 25x'25 Alliance is proud to have been a part of this effort," Bailey said. "But without

the interest, support, participation and commitment of stakeholders representing small business, professionals, agencies, contractors, finance, families, rural communities, the environment and others, this achievement would not have been possible. The new state programs will help improve the energy efficiency of homes and businesses and create a new economic engine built around home energy professionals and local contractors."

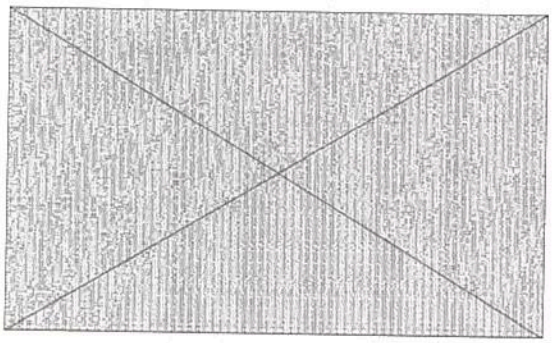
Bailey notes that the implementation and delivery of programs "will not occur tomorrow," stating that the development, submittal, review, approval and implementation of the new program plans and portfolios will follow a schedule set out by Commission rules.

"This will give the utilities time to select programs, build staff and develop marketing strategies and also will give contractors and energy professionals time to train a new workforce," he said.

He called on stakeholders to "remain involved and committed to ensuring that each of the utilities put forth effective and timely energy efficiency program portfolios," as well as to "promote, advocate and share information about these new programs with our friends, neighbors and colleagues when implementation begins."

Solar Research Firm Says U.S. Reaches 10 GW Milestone

Solar photovoltaic (PV) installations in the US have now broken through the 10 gigawatt (GW) barrier, following strong market deployment since the start of 2010. During the first half of 2013, more than 1.8 GW of new solar PV capacity was installed in the United States, according to the NPD Solarbuzz North America PV Market Quarterly report.



"The US has now joined an elite group of maturing solar PV markets that have accumulated more than 10 GW of installed capacity," said Christopher Sunsong, analyst at NPD Solarbuzz, a solar market research firm. "Only Germany, Italy, and China have more installed PV capacity than the US. The US is only the fourth country to reach the 10 GW milestone of installed PV capacity."

Solar PV has been one of the fastest growing energy sources in the United States over the past six years, with a compound annual growth rate of more than 50 percent since 2007. Cumulative solar PV installations are forecast to increase an additional 80 percent over the next 18 months, surpassing 17 GW by the end of 2014.

The rapid uptake of solar PV in the US is being driven by the dramatic solar system price declines observed since 2011. Average installed system prices in the US have declined from around $6/watt two years ago to approximately $4.25/watt for residential installations and $3/watt for large utility-scale PV projects today.

"U.S. solar PV market growth has been stimulated by an increased range of solar incentive programs at the state level," said Sunsong. "While the Far West and Mid-Atlantic states dominate the 10 GW installed, the Southwest and Southeast regions have recently made strong contributions. Other regions however, such as the Great Plains and Great Lakes, remain largely undeveloped, creating further market upside going forward." (See accompanying chart.)

Solar PV installations in the United States have seen significant growth since the start of 2010; 83 percent of the 10 GW were completed within the past 14 quarters. Almost 1,400 solar PV installations in excess of 500 kW in 39 different states are providing 5.4 GW of capacity, and nearly 40 percent of that capacity is within California.

Global Solar PV Market Projected to Surpass $134 Billion by 2020

According to a new report from Navigant Research, annual worldwide revenues from solar PV installations will surpass $134 billion by 2020.

Following years of oversupply and unsustainable, often artificially low module pricing, 2013 is expected to be the year that the global solar photovoltaic (PV) market begins to stabilize, the analysis says. Market activity is shifting from Europe to Asia Pacific and the United States, as these markets reach maturity and solar PV approaches grid parity in a growing number of regions. Considerable opportunity also exists in emerging markets, led by Chile, South Africa, and Saudi Arabia.

"Financial incentives, government renewable energy deployment targets, and technology cost reduction are still the most important drivers of the solar PV market," says Dexter Gauntlett, research analyst with Navigant Research. "In most cases, these renewable energy deployment and cost reduction targets will be met or exceeded, with 438 GW of solar PV installed cumulatively between 2013 and 2020."

He said that by the end of 2020, solar PV is expected to be cost-competitive with retail electricity prices, without subsidies, in a significant portion of the world.

Several emerging trends will shape the trajectory of the global solar PV market over the next several years, according to the report. Utility-scale solar PV power plants are coming online, while lower system prices are opening up new markets for distributed PV and helping the technology reach grid parity more quickly in high-cost retail electricity markets. In distributed solar PV markets, innovative financing options are making the technology available to more homeowners and commercial property owners.

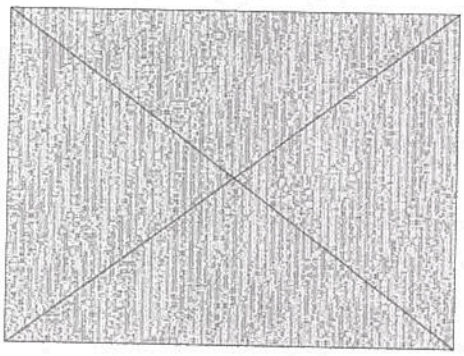
At the same time, many countries have retooled their financial incentives, often placing greater emphasis on onsite generation, to prevent an overheated market, the analysis says. As a result, many companies see 2017 (the year after solar PV investment tax credits are reduced to 10 percent in the United States) as the year that solar PV will be able to stand on its own without subsidies in most major markets.

The report provides solar PV installed capacity and revenue forecasts through 2020, segmented by distributed (less than 1 megawatt) and non-distributed (1 megawatt or more) systems, broken down by region and by selected countries. Policy issues and market drivers are detailed for each region, along with average solar PV installation prices over the forecast period.

The report also includes a detailed discussion of key inflection points that will help shape the solar PV market over the next several years.

Clean Energy Group Releases Southeast Woody Bioenergy Inventory

An inventory of woody bioenergy recently released by the Southeast Alliance for Clean Energy (SACE) shows that biopower in the region is growing modestly, with biomass combined heat and power (CHP) and thermal progressing faster, and wood pellet export production growing by more than 2,500 percent in six years.



The regional inventory is based on literature review, analysis of published datasets and a survey of industry developers. In addition to CHP, thermal and wood pellets, the analysis also covers biomass electricity and cellulosic biofuels).

SACE leaders say the study was prompted by sustainability concerns and a question of whether woody biomass utilization in the Southeastern United States is proceeding too rapidly or too slowly?

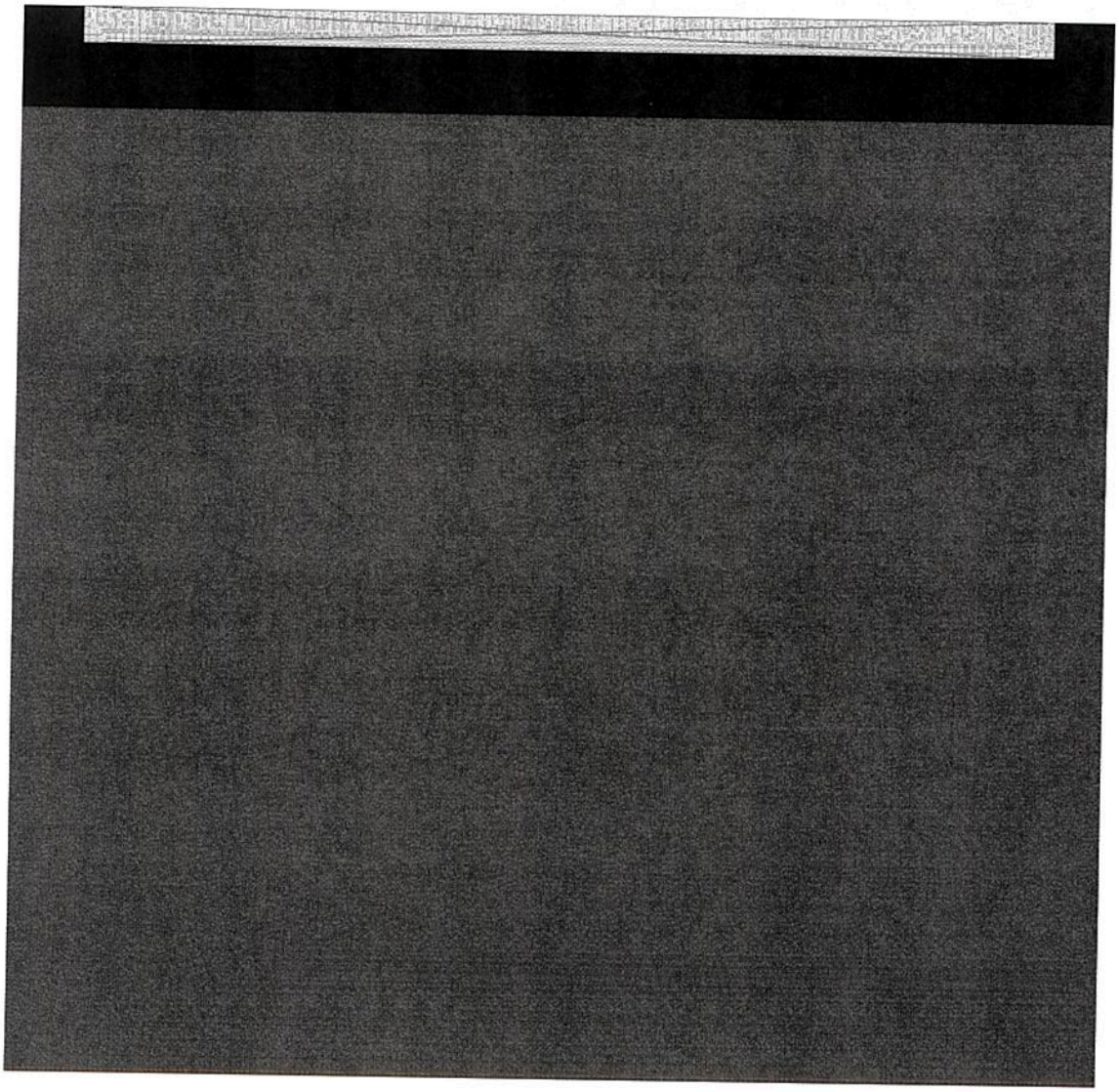
The inventory compares current development in biopower to historic trends in capacity, and makes projections as to likelihood of specific future developments. A detailed discussion is also provided of carbon and climate implications that gives new insights into the current literature, and offers projections of how additional bioenergy might expand in ways that clearly benefit the climate.

Among the recommendations offered by the inventory's authors are state and federal policies that encourage CHP/thermal and small biopower using forest residuals and mill waste as a means of is promoting the effective use woody biomass as a bioenergy

resource for mitigating climate change. That includes a renewal and extension of the Production Tax Credit (PTC), the Business Energy Investment Tax Credit (ITC), and cash grants that have been instrumental in the few domestic bioenergy developments that have succeeded in the region.

SACE also calls for maintaining the federal Renewable Fuels Standard and its goals for advanced cellulosic biofuels.

It also notes that, "at a minimum, bioenergy developers should voluntarily embrace environmental safeguards as a means to ensure continued access to feedstocks."



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